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PROCEEDINGS
OF THE
AMERICAN ASSOCIATION OF MUSEUMS

Vol. I

1907

THE AMERICAN ASSOCIATION OF MUSEUMS, JUNE 4, 1907, ON THE STEPS OF LECTURE HALL OF SCIENCE CARNEGIE INSTITUTE, PITTSBURGH, PA.

PROCEEDINGS

OF THE

AMERICAN ASSOCIATION OF MUSEUMS

RECORDS OF THE MEETING
HELD AT THE MUSEUM OF THE CARNEGIE INSTITUTE
PITTSBURGH, PENNSYLVANIA

JUNE 4–6, 1907

PITTSBURGH, PA.
1908

PRESS OF
THE NEW ERA PRINTING COMPANY
LANCASTER PA

OFFICERS OF THE AMERICAN ASSOCIATION OF MUSEUMS

1906–1907

President,

HERMON C. BUMPUS,
American Museum of Natural History, New York.

First Vice-President,

WILLIAM M. R. FRENCH,
Art Institute of Chicago, Chicago.

Second Vice-President,

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Secretary,

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Field Museum of Natural History, Chicago.

Treasurer,

W. P. WILSON,
Philadelphia Commercial Museums, Philadelphia.

Councillors,

1906–1909

RICHARD RATHBUN,
United State National Museum, Washington.

EDWARD S. MORSE,
Peabody Academy of Science, Salem, Mass.

1906–1908

N. L. BRITTON,
New York Botanical Garden, New York.

J. E. TALMAGE,
Deseret Museum, Salt Lake City.

1906–1907

FREDERICK A. LUCAS,
Brooklyn Institute of Arts and Sciences, Brooklyn.

WILLIAM H. GOODYEAR,
Brooklyn Institute of Arts and Sciences, Brooklyn.

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Secretary,

P. M. REA,
Charleston Museum, Charleston, S. C.

Treasurer,

W. P. WILSON,
Philadelphia Commercial Museums, Philadelphia.

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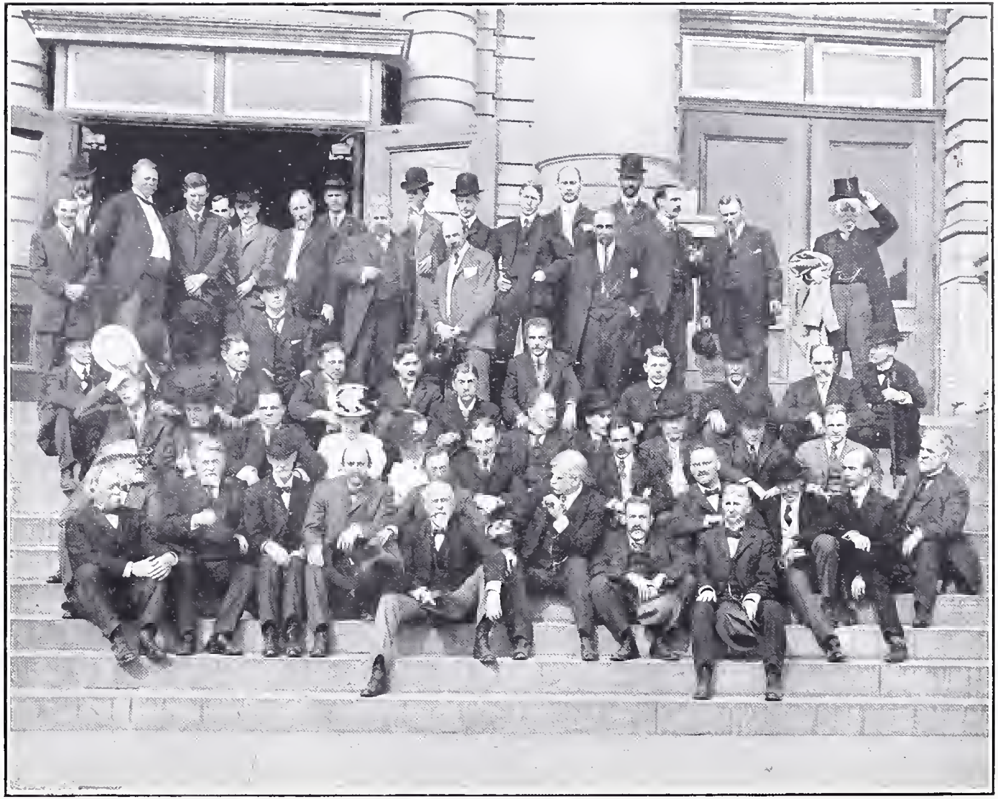
1907–1908

William M. R. French,
George A. Dorsey,
William J. Holland,
P. M. Rea.



FIRST MEETING OF THE AMERICAN ASSOCIATION OF MUSEUMS ON STEPS
OF THE MUSEUM OF THE NEW YORK BOTANICAL SOCIETY, MAY 16, 1906

ORGANIZATION

AND

Minutes of the First Meeting

OF THE

American Association of Museums

HELD IN NEW YORK CITY,

May 15-16, 1906.

ORGANIZATION

On December 21, 1905, an informal meeting was held at the National Museum in Washington for the purpose of discussing the advisability of endeavoring to establish an association of the museums of America. As the result of the informal conference the following circular letters were issued to various persons who were supposed to be interested in the movement:

> CARNEGIE MUSEUM, PITTSBURGH, Dec. 27, 1905.
>
> At an informal meeting, at which the undersigned were present, it was
>
> (1) *Resolved,* To issue a call for a preliminary meeting in order to organize THE MUSEUMS ASSOCIATION OF AMERICA. It was
>
> (2) *Resolved,* That the courteous invitation of Dr. H. C. Bumpus, of the American Museum of Natural History, Central Park, New York, to meet at that institution on May 15, 1906, at 10 A. M., be accepted. It was
>
> (3) *Resolved,* That Dr. W. J. Holland, the Director of the Carnegie Museum, Pittsburgh, Pa., be appointed a committee to issue an invitation for this meeting, with instructions to address the same to the heads of a number of the leading mu-

seums of America and individuals who are deemed by the undersigned to be likely to take an interest in the formation of such an association. Dr. Holland was also requested to enclose with the invitation, merely as a basis for consideration and discussion, certain memoranda relating to the organization, which are regarded by the undersigned as outlining the thoughts which were in their minds when considering the subject of forming the Association.

In accordance with the foregoing resolutions a hearty invitation is hereby extended to you to meet with us at the American Museum of Natural History, New York City, May 15, 1906, at 10 o'clock A. M.

RICHARD RATHBUN,
(Asst. Sec. Smithsonian Institution, in charge U. S. National Museum).
H. C. BUMPUS,
(Director, American Museum of Natural History).
W. P. WILSON,
(Director, Philadelphia Museums).
F. A. LUCAS,
(Curator-in-Chief, Brooklyn Institute).
N. L. BRITTON,
(Director, New York Botanical Garden).
F. J. V. SKIFF,
(Director, Field Museum Natural History).
W J MCGEE,
(Director, St. Louis Public Museum).
SAMUEL HENSHAW,
(Curator, Museum of Comparative Zoölogy).
W. J. HOLLAND,
(Director, Carnegie Museum).

CARNEGIE MUSEUM, PITTSBURGH, PA., December 27, 1905.

Dear Sir:—I herewith enclose an invitation from the heads of nine of the museums of America, who met informally on December the 21st, to discuss the propriety of endeavoring to establish THE MUSEUMS ASSOCIATION OF AMERICA. If you can make it possible to attend a convention to be held for this purpose at the American Museum of Natural History in New

York, on May the 15th, 1906, at 10 o'clock, I sincerely trust that you will do so, and come prepared to unite with your friends in the discussion of the necessary preliminary steps, as well as to bring before the gathering any original observations, or papers relating to museums and their administration, which it may be your wish to present.

You will greatly oblige me by signifying on the blanks herewith attached whether your presence at this convention may be expected, and also what are the subjects which you would like to present for consideration and discussion at the meeting.

I am, yours very truly,
W. J. HOLLAND,
Committee.

Invitations were also extended through the columns of *Science* to all who might be interested in the formation of such a society to give in their adhesion to the movement.

MINUTES OF THE FIRST MEETING OF THE AMERICAN ASSOCIATION OF MUSEUMS, HELD IN NEW YORK CITY, MAY 15–16, 1906

Session of May Fifteenth

Morning

In response to the calls which had been issued a large number of delegates from the various museums of America met at the Museum of Natural History in New York on May 15th, at 10:30 o'clock. The meeting was called to order by Dr. W. J. Holland, the Director of the Carnegie Museum, Pittsburgh, and upon his motion Dr. Hermon C. Bumpus, the Director of the American Museum of Natural History, was called upon to preside. Dr. Bumpus, having taken the chair, requested Dr. George A. Dorsey of the Field Museum of Natural History to act as temporary secretary. Dr. Bumpus on behalf of the American Museum of Natural History extended a hearty welcome to those who were present.

The following cablegram was read from the President of the Museums Association of Great Britain, Dr. William E. Hoyle:

"The American Museums Association.

Best wishes for successful inauguration and future progress from Museums Association. W. E. Hoyle."

To which Professor E. S. Morse was instructed to prepare and send an appropriate reply.

A congratulatory letter from Professor F. W. Putnam was read, and Dr. W. J. Holland was authorized to send the following message in reply:

"Dr. F. W. Putnam,
Peabody Museum of Archeology, Cambridge, Mass.:

I am authorized by the American Association of Museums to thank you for your kind letter of congratulation and to express on their behalf the wish that you may be speedily restored to fulness of health and vigor and be able to attend future meetings of the Association, which is honored in recognizing you as one of those who take part in its organization. W. J. Holland."

The names of those who had replied to the original invitation and who, either by being present or by letter, had signified their adhesion to the movement, were read at the request of the Chair by Dr. W. J. Holland.

Those present were the following:

Charles C. Adams, Ann Arbor, Michigan.
J. A. Allen, Curator, Department of Mammalogy and Ornithology, American Museum of Natural History, New York, N. Y.
F. C. Baker, Curator, Chicago Academy of Sciences, Chicago, Ill.
E. H. Barbour, University of Nebraska, Lincoln, Nebraska.
William Beutenmüller, Curator, Department of Entomology, American Museum of Natural History, New York, N. Y.
Franz Boas, American Museum of Natural History, New York, N. Y.
N. L. Britton, Director of the New York Botanical Garden, Bronx Park, New York, N. Y.
W. A. Bryan, Curator of Ornithology, Bernice Pauahi Bishop Museum, Honolulu, H. I.
Hermon C. Bumpus, Director, American Museum of Natural History, New York, N. Y.
Frank M. Chapman, Associate Curator, Department of Mammalogy and Ornithology, American Museum of Natural History, New York, N. Y.
John M. Clarke, Director, New York State Museum, Albany, New York.
T. L. Comparette, Curator Cabinet of Coins, United State Mint, Philadelphia, Pa.
J. R. Coolidge, Jr., Temporary Director, Museum of Fine Arts, Boston, Mass.
C. B. Cory, Cürator, Department of Ornithology, Field Museum of Natural History, Chicago, Ill.
B. E. Dahlgren, Assistant Curator of Invertebrate Zoölogy, American Museum of Natural History, New York, N. Y.
George A. Dorsey, Curator, Department of Anthropology, Field Museum of Natural History, Chicago, Ill.
George Francis Dow, Secretary, The Essex Institute, Salem, Mass.
C. R. Eastman, Museum of Comparative Zoölogy, Cambridge, Mass.
Carl H. Eigenmann, Indiana University, Bloomington, Indiana.
D. G. Elliot, Curator of Zoölogy, Field Museum of Natural History, Chicago, Ill.
O. C. Farrington, Curator of Geology, Field Museum of Natural History, Chicago, Ill.
W. M. R. French, Director of the Art Institute of Chicago, Chicago, Ill.
Miss Annie B. Gallup, Children's Museum, Brooklyn Institute, Brooklyn, N. Y.
J. W. Gidley, Department of Geology, United States National Museum, Washington, D. C.
Benjamin Ives Gilman, Secretary, Museum of Fine Arts, Boston, Mass.
W. H. Goodyear, Curator of Fine Arts, The Museum of the Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
L. P. Gratacap, Curator, Department of Mineralogy and Conchology, American Museum of Natural History, New York, N. Y.

Christopher W. Hall, Professor of Geology and Mineralogy, University of Minnesota, Minneapolis, Minn.

O. P. Hay, Associate Curator, Department of Vertebrate Paleontology, American Museum of Natural History, New York, N. Y.

Samuel Henshaw, Curator, Museum of Comparative Zoölogy, Cambridge, Mass.

Charles H. Hitchcock, Curator, Butterfield Museum, Dartmouth College, Hanover, N. H.

W. J. Holland, Director, Carnegie Museum, Pittsburgh, Pa.

Arthur Hollick, Assistant Curator, New York Botanical Garden, New York, N. Y.

Marshall A. Howe, Assistant Curator, New York Botanical Garden, New York, N. Y.

Edmund Otis Hovey, Associate Curator, Department of Geology and Invertebrate Paleontology, American Museum of Natural History, New York, N. Y.

Lawrence W. Jenkins, Curator, Peabody Museum, Salem, Mass.

Charles W. Johnson, Curator, Boston Society of Natural History, Boston, Mass.

F. A. Lucas, Curator-in-Chief of the Museum of the Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.

F. B. Loomis, Amherst College, Amherst, Mass.

W. D. Matthew, Associate Curator of Vertebrate Paleontology, American Museum of Natural History, New York, N. Y.

Charles W. Mead, Assistant, Department of Ethnology, American Museum of Natural History, New York, N. Y.

Wm. C. Mills, Ohio State Archeological and Historical Society, Columbus, Ohio.

Roy W. Miner, Assistant Curator, Department of Invertebrate Zoölogy, American Museum of Natural History, New York, N. Y.

Henry Montgomery, Curator of the New Museum, University of Toronto, Toronto, Canada.

Edward S. Morse, Director, Peabody Academy of Science, Salem, Mass.

George Grant MacCurdy, Curator of Anthropology, Yale University Museum, New Haven, Conn.

W J McGee, Director of the St. Louis Public Museum, St. Louis, Mo.

Henry F. Nachtrieb, Curator, The Museum, University of Minnesota, Minneapolis, Minn.

C. C. Nutting, Curator of the Museum, State University of Iowa, Iowa City, Iowa.

Henry Fairfield Osborn, Curator Vertebrate Paleontology, American Museum of Natural History, New York, N. Y.

George H. Pepper, Assistant, Department of Ethnology, American Museum of Natural History, New York, N. Y.

Miss C. M. Perine, Assistant to Director of the Wistar Institute of Anatomy, Philadelphia, Pa.

P. M. Rea, Director, The Charleston Museum, Charleston, S. C.

Edward Robinson, Assistant Director Metropolitan Museum of Art, New York, N. Y.

George H. Sherwood, Curator of Department of Public Instruction, American Museum of Natural History, New York, N. Y.
J. A. Shafer, Custodian, New York Botanical Garden, New York, N. Y.
J. K. Small, Curator, Museum and Herbarium of the New York Botanical Garden, New York, N. Y.
F. J. V. Skiff, Director, Field Museum of Natural History, Chicago, Ill.
Harlan I. Smith, Assistant Curator of Ethnology, American Museum of Natural History, New York, N. Y.
Witmer Stone, Curator, Academy of Natural Sciences, Philadelphia, Pa.
J. E. Talmage, Director, Deseret Museum, Salt Lake City, Utah.
Ralph W. Tower, Curator, Department of Physiology, American Museum of Natural History, New York, N. Y.
C. H. Townsend, Director, New York Aquarium, New York, N. Y.
Henry L. Ward, Director, Milwaukee Public Museum, Milwaukee, Wis.
Wm. Morton Wheeler, Curator of Invertebrate Zoölogy, American Museum of Natural History, New York, N. Y.
R. P. Whitfield, Curator of Geology and Invertebrate Paleontology, American Museum of Natural History, New York, N. Y.
C. P. Wilcomb, late Director, Golden Gate Park Museum, San Francisco, California.
Charles C. Willoughby, Assistant Curator, Peabody Museum of American Archeology and Ethnology, Cambridge, Mass.
W. P. Wilson, Director, Philadelphia Museums, Philadelphia, Pa.
Clark Wissler, Acting Curator, Department of Ethnology, American Museum of Natural History, New York, N. Y.
A. Woodward, Curator, Department of Maps and Charts, American Museum of Natural History, New York, N. Y.

Those who signified their adhesion by letter were the following:

H. M. Ami, Geological Survey of Canada, Ottawa, Canada.
Edwin A. Barber, Curator, The Pennsylvania Museum and School of Industrial Art, Philadelphia, Pa.
John W. Beatty, Director, Department of Fine Arts, Carnegie Institute, Pittsburgh, Pa.
W. T. Brigham, Director, Bernice Pauahi Bishop Museum, Honolulu, H. I.
E. C. Case, State Normal School, Milwaukee, Wis.
Sir Caspar Purdon Clarke, Director, Metropolitan Museum of Art, New York, N. Y.
H. F. Cleland, Curator, The Museum, Williams College, Williamstown, Massachusetts.
G. L. Collie, Acting Curator, Logan Museum, Beloit College, Beloit, Wis.
George F. Comfort, Director of the Syracuse Museum of Fine Arts, Syracuse, N. Y.
Bashford Dean, Honorary Curator of Fishes, American Museum of Natural History, New York, N. Y.
Lewis L. Dyche, Curator, Department of Systematic Zoölogy, University of Kansas, Lawrence, Kansas.

Rafael Espinosa Escallon, Director, Museo Nacional, Bogota, Colombia.
Free Museum of Science and Art, Philadelphia, Pa.
J. H. Gest, Director, Art Museum of the Cincinnati Museum Association, Cincinnati, Ohio.
Milton J. Greenman, Director, Wistar Institute of Anatomy, Philadelphia, Pa.
Emil August Goeldi, Director, Museo Gœldi, Pará, Brazil.
G. B. Gordon, Curator of Ethnology, Free Museum of Science and Art, Philadelphia, Pa.
Miss Delia I. Griffin, Director, Fairbanks Museum of Natural Sciences, St. Johnsbury, Vt.
Hermann Von Ihering, Director, Museo Paulista, São Paulo, Brazil.
Junius Henderson, Curator, The Museum, University of Colorado, Boulder, Colorado.
Wm. T. Hornaday, Director, New York Zoölogical Garden, Bronx Park, New York, N. Y.
Halsey C. Ives, Director, Museum of Fine Arts, St. Louis, Missouri.
Institute of Jamaica, Kingston, Jamaica.
Francis Kermode, Curator, Provincial Museum, Victoria, British Columbia.
J. S. Kingsley, Curator, Barnum Museum, Tufts College, College Hill, Mass.
George F. Kunz, Honorary Curator of Gems, American Museum of Natural History, New York, N. Y.
Charles M. Kurtz, Director, Albright Art Gallery, Buffalo Academy of Fine Arts, Buffalo, N. Y.
J. C. K. Laflamme, Director, The Museum, Université Laval, Quebec, Canada.
George Lefevre, Curator, Zoölogical Museum, University of Missouri, Columbia, Mo.
Elizabeth J. Letson, Director, Buffalo Society of Natural History, Buffalo, N. Y.
Edmund Drummond Libbey, President Toledo Museum of Arts, Toledo, Ohio.
Josua Lindahl, Director, Museum of Natural History, Cincinnati, Ohio.
Leverett Mills Loomis, Curator-in-Chief, California Academy of Sciences, San Francisco, California.
Albert Davis Mead, Professor of Comparative Anatomy, Brown University, Providence, R. I.
C. Hart Merriam, Chief, Biological Survey, Washington, D. C.
Charles S. Minot, Professor of Histology and Human Embryology, Harvard Medical School, Boston, Mass.
Harry C. Peterson, Curator, The Museum, Leland Stanford, Jr., University, Palo Alto, California.
Frederic W. Putnam, Curator, Peabody Museum of American Archeology and Ethnology, Cambridge, Mass.
Richard Rathbun, Assistant Secretary, Smithsonian Institution, in charge United States National Museum, Washington, D. C.
Charles Schuchert, Curator, Yale Museum, New Haven, Conn.
W. B. Scott, Professor of Geology and Paleontology, University Museum, Princeton, N. J.
T. Guilford Smith, President, Buffalo Society Natural Sciences, Buffalo, N. Y.
Wm. Trelease, Director, Missouri Botanical Garden, St. Louis, Mo.

Henry A. Ward, 6020 Division St., Chicago, Ill.
Burt G. Wilder, Professor of Neurology, Physiology, and Vertebrate Zoölogy, Cornell University, McGraw Hall, Ithaca, N. Y.

Upon motion of Dr. W. J. Holland the Secretary was instructed to convey to Mr. William T. Hornaday, the Director of the New York Zoölogical Park, who was prevented by dangerous illness from being present, the assurance of the sympathy of the meeting and best wishes for his speedy recovery.

A Committee upon Organization was appointed, consisting of Dr. W. J. Holland, Carnegie Museum; Mr. W. M. R. French, Art Institute of Chicago; Professor P. M. Rea, Charleston Museum, South Carolina; Professor James E. Talmage, Deseret Museum, Salt Lake City, and Dr. W. P. Wilson, Philadelphia Commercial Museums.

The reading of papers was then made the order of the day. Dr. W J McGee presented the first paper: "Is It Desirable to Introduce Departments of Geography into Educational Museums?" The paper was discussed by Messrs. Farrington, Hovey, and Montgomery. Dr. Benjamin Ives Gilman then presented two papers, (1) "Two Kinds of Museums," (2) "Aims and Principles of the Construction and Management of Museums of Fine Art." The reading of these papers was followed by remarks by Messrs. Goodyear, Lucas, and others. The discussion was interrupted by a motion to take a recess in order to accept the invitation extended by the American Museum of Natural History to partake of luncheon.

Afternoon

The meeting reconvened at 2:30 P. M. Professor E. S. Morse stated that he desired to add some remarks to those already made in reference to the two papers presented by Dr. Gilman, but owing to Dr. Gilman's absence further discussion of these papers was postponed.

Professor Henry Montgomery presented a paper on "Museums and Museum Work in the Public Schools." The reading of the paper was followed by a discussion, in which Messrs. Holland, Wilson, Sherwood, French, Goodyear, and Ward participated.

The reading of papers was by common consent interrupted in order to give the Committee on Organization an opportunity to be heard. The Committee presented a rough draft of the Constitution, with the request that as the articles were read in succession suggestions should be made from the floor. This was done, and the Committee then retired in order to revise the draft in the light of the various suggestions which had been made.

The reading of papers was resumed. Professor P. M. Rea read a paper upon "A Method of Recording Bird Records," which was illustrated, and elicited commendatory remarks from a number of members. The next paper was read by Mr. F. C. Baker. His subject was "The Educational Arrangement of Natural History Museums." A brief discussion followed in which a number of members participated.

Dr. Britton then invited those present to hold their next session at the Museum of the New York Botanical Society, Bronx Park. The invitation was accepted, and the meeting adjourned at 5 P. M. to reconvene on the morrow at 10 A. M. at the Museum of the New York Botanical Society.

SESSION OF MAY SIXTEENTH

Morning

The meeting was called to order at 10 A. M., in the Museum of the New York Botanical Society, Bronx Park, Dr. Hermon C. Bumpus in the chair.

The Committee on Organization submitted a report, recommending the adoption of the draft of a constitution which they submitted.

The report of the Committee was upon motion adopted, with the understanding that this Constitution shall be regarded as preliminary, subject to revision at the next annual meeting. The Committee was discharged.

The Association then proceeded to the nomination and election of officers by ballot.

Dr. Hermon C. Bumpus was elected President.

The Association then took a recess to partake of a luncheon provided by the New York Botanical Society.

Afternoon

The Association reconvened in the Museum of the New York Botanical Society at 3:30 P. M. The following officers were elected:

First Vice-President,
Mr. William M. R. French, Art Institute of Chicago.
Second Vice-President,
Dr. W. J. Holland, Carnegie Museum.
Secretary,
Dr. George A. Dorsey, Field Museum of Natural History, Chicago.
Treasurer,
Dr. W. P. Wilson, Philadelphia Commercial Museums.
Councillors,
To serve for three years:
Dr. Richard Rathbun, United States National Museum.
Professor E. S. Morse, Peabody Academy of Science, Salem, Massachusetts.
To serve for two years:
Dr. N. L. Britton, New York Botanical Garden, New York, N. Y.
Professor J. E. Talmage, Deseret Museum, Salt Lake City, Utah.
To serve for one year:
Mr. F. A. Lucas and Dr. William H. Goodyear, both of the Brooklyn Institute of Arts and Sciences.

Upon motion of Dr. Skiff the thanks of the Association were tendered to Dr. Holland for the active interest which he had shown in bringing about the formation of the Association.

A paper was read by Dr. C. H. Eigenmann on " Some Problems to be Solved by Museums, as Illustrated by the Distribution of South American Fishes." This paper was discussed by Messrs. E. S. Morse, F. J. V. Skiff, and others. A paper by Dr. Milton J. Greenman, upon " Metallic Cases in Museums," was read by Miss C. M. Perine, who also presented a number of sectional models showing the salient features of the construction of the cases which are in use in the Wistar Institute of Anatomy in Philadelphia, Pa. The paper elicited considerable discussion, which was participated in by Messrs. Montgomery, Morse, Skiff, Holland, and Dorsey.

Inasmuch as the hour was growing late and it was felt hardly expedient to continue the sessions for another day, it was resolved that any others who might wish to present papers should have permission to present them by title, with the understanding that the titles would be incorporated in the published reports of the meeting. The following papers were then presented:

By Mr. T. L. Comparette, Curator of the Numismatic Collection, United States Mint, Philadelphia, Pa., upon "Coins and Medals; Their Place in a Public Museum."

By Mr. C. C. Adams, Curator, the Museum, University of Michigan, Ann Arbor, Michigan, upon "Some of the Advantages of an Ecological Arrangement for a Natural History Museum."

By Prof. C. W. Hall, Minneapolis, Minnesota, upon "The Preservation of the Type in Museum Development."

By Dr. Wm. T. Brigham, Director, the Bernice Pauahi Bishop Museum, Honolulu, H. I., upon (1) "Shall We Explore the Pacific Now?" and (2) "Museum Collections as viewed by Chinese, Japanese, Portuguese, and Hawaiians in Honolulu."

By Prof. E. H. Barbour, University of Nebraska, Lincoln, Nebraska, upon (1) "The Nebraska State Museum," (2) "The Private Museums of Nebraska."

By Dr. Josua Lindahl, Director of the Museum of Natural History, Cincinnati, Ohio, upon "Suggestions in Regard to Descriptive Labels in Museums."

By Dr. W. P. Wilson, Director the Philadelphia Commercial Museums, Philadelphia, Pa., upon "The History, Organization, Development, and Work of Commercial Museums."

By Mr. F. A. Lucas, Curator-in-Chief, The Museum of the Brooklyn Institute of Arts and Sciences, upon "The Origin and Evolution of Museums."

By Mr. Henry L. Ward, Director of the Milwaukee Public Museum, Milwaukee, Wisconsin, upon "The Exhibition of Large Groups in Museums."

Mr. F. J. V. Skiff presented the following resolutions, which upon motion were referred to the Council for action:

> "*Resolved,* That it is the sense of this Association that the American Association of Museums should be allied with the National Education Association."
>
> "*Resolved,* That a Special Committee of three be appointed to confer in reference to the foregoing suggestion with the authorities of the National Education Association, and report at their convenience to the Association or to the Council."

Upon motion of Dr. W. J. Holland it was

> "*Resolved,* That the Council be made a Standing Committee upon the preliminary draft of the Constitution, and that all persons desiring to make suggestions in reference to the Constitution be requested to submit the same to the Council."

Mr. O. C. Farrington submitted the following resolution, which was upon motion referred to the Council:

> "*Whereas,* Museums are institutions devoted to public welfare and to the discovery and dissemination of knowledge, and their curators devote themselves to the cause of popular education, therefore the American Association of Museums hereby
>
> *Memorializes* the Trustees of the Carnegie Foundation for the Promotion of Teaching, requesting the admission of the curators of American museums to the privileges of this foundation under such regulations as shall hereafter be agreed upon by a committee of this Association and the Trustees of the Foundation."

Mr. George A. Dorsey submitted the following resolution, which upon motion was referred to the Council:

> "*Resolved,* That a Special Committee of three be appointed by the Chair to consult with the proper authorities for the purpose of endeavoring to secure fourth-class postal rates upon the publications of museums and other educational institutions, in cases in which such publications are distributed gratuitously, but cannot be issued at stated intervals of time."

Mr. W. A. Bryan presented the following resolution, which was also referred to the Council:

> "*Resolved,* That it is the sense of this meeting that the Council of the American Association of Museums be instructed to take under advisement the matter of preparing some suitable form of publication which shall be the official organ of this Association, and that it is hereby empowered to appoint the Editor and Associate Editor, and to make all necessary arrangements for the publication of such Museum Journal as they may deem necessary."

Mr. F. C. Baker presented the following resolutions, which were also referred to the Council:

> "*Resolved,* That the American Association of Museums extends its heartfelt sympathy to the California Academy of Sciences in the loss of its Museum building and collections, and

> "*Resolved,* That each museum here represented pledges itself to aid the California Academy of Sciences in rebuilding its collections, in every way within its power."

Upon motion the thanks of the Association were by a rising vote tendered to Dr. Hermon C. Bumpus and the authorities of the American Museum of Natural History and to Dr. N. L. Britton and the authorities of the New York Botanical Garden for the generous hospitality shown to the Association during its sessions.

Dr. Holland presented an invitation from the Trustees of the Carnegie Museum to hold the next meeting of the Association in Pittsburgh. This invitation was accepted with thanks, and it was resolved that the Council in fixing the time for the next general meeting should select a date not earlier than the first week in May and not later than the last week in June. Adjourned.

Attest: GEO. A. DORSEY,
Secretary.

CONSTITUTION OF THE AMERICAN ASSOCIATION OF MUSEUMS

ARTICLE I

NAME

The name of this Association shall be "The American Association of Museums."

ARTICLE II

OBJECT

The object of this Association shall be to promote the welfare of Museums, to increase and diffuse knowledge of all matters relating to them, and to encourage helpful relations among Museums and those interested in them.

ARTICLE III

MEMBERSHIP

All Museums officially represented at the first meeting of this Association, held at the American Museum of Natural History in New York, on May 15, 1906, all persons taking part in the organization of this Association, or who on the above date, or prior thereto, have by letter signified their wish to become members of the Association, shall become Charter Members on payment before the next annual meeting of the Association of the fees hereinafter provided for.

The Members of the Association shall be Active, Associate, Sustaining, and Honorary.

Persons actively engaged in the work of Museums may become Active Members on the payment of two dollars per annum, and may become Active Members for Life upon payment of thirty dollars at any one time.

Persons not actively engaged in the work of Museums, contributing five dollars per annum, may become Associate Members.

Each Museum paying not less than ten dollars a year shall be a Sustaining Member of the Association, and through its chief executive officer, or a properly accredited representative, shall be entitled to cast a vote on all matters coming before the Association.

Persons distinguished for eminent services, either to the cause of Museums or to this Association, may become Honorary Members. The number of Honorary Members shall be limited to fifteen. When ten Honorary Members have been elected then thereafter not more than two such members may be elected annually.

Active and Sustaining Members only shall have a right to vote, and Active Members only may hold office.

Any Museum or person proposed in writing for Active, Associate, or Sustaining Membership by a Member of the Association, and approved by the Council, upon the payment of the proper fee shall become a Member of the Association.

Any person contributing five hundred dollars or more at any one time shall become a Patron of the Association.

ARTICLE IV

OFFICERS

The officers of the Association shall be a President, two Vice-Presidents, a Secretary, and a Treasurer, and six other persons designated as Councillors, and these eleven shall constitute the Council. The President and two Councillors chosen by the Association shall retire annually, and for one year shall be ineligible for re-election to the same office.

ARTICLE V

COUNCIL

The general control of the affairs of the Association, except as otherwise herein provided, shall be vested in the Council.

ARTICLE VI

ELECTION OF OFFICERS

Officers shall be elected by ballot at the annual meeting.

The Council shall have power to fill any vacancies which may occur in its membership between annual meetings.

ARTICLE VII

MEETINGS

A general meeting shall be held in each calendar year. Special meetings may be appointed by the Association or called by the Council. The time and place of the annual meeting shall be determined by the Association. In order to diffuse a knowledge of Museums and their work, the Association shall meet in a different city or town each succeeding year, unless otherwise determined by the Association.

At the annual meeting papers may be read, matters relating to Museums discussed, and any business relating to the affairs of the Association shall be transacted.

Special meetings may be called by the Council in emergencies, and only matters stated in the call shall be considered at such special meetings.

THE AMERICAN ASSOCIATION OF MUSEUMS[1]

Life Members

The asterisk (*) denotes an original or "Charter Member," who has qualified as such by paying his dues during the first fiscal year of the life of the Association.

Crook, A. R., Curator, Museum of Natural History, State of Illinois, Springfield, Illinois.

*Hall, Robert C., Owner, Hall Museum of Anthropology, 240 Fourth Avenue, Pittsburgh, Pa.

*Henshaw, Samuel, Curator, Museum of Comparative Zoölogy, Harvard University, Cambridge, Mass.

*Holland, W. J., Director, Carnegie Institute, Department of the Museum, Pittsburgh, Pa.

*Minot, Charles S., Harvard Medical School, Boston, Mass.

*Talmage, James E., Director, The Deseret Museum, Salt Lake City, Utah.

Active Members.

*Adams, Charles C., Director, Natural History Museum, Cincinnati Society of Natural History, Cincinnati, Ohio.[2]

*Akeley, C. E., Taxidermist-in-Chief, Field Museum of Natural History, Chicago, Ill.

*Allen, J. A., Curator of Mammals and Ornithology, American Museum of Natural History, New York, N. Y.

*Ami, Henry M., Geological Survey of Canada, Ottawa, Canada.

Atkinson, D. A., Honorary Custodian of Reptiles and Amphibians, Carnegie Museum, Pittsburgh, Pa.

*Baker, Frank C., Curator, The Chicago Academy of Sciences, Lincoln Park, Chicago, Ill.

*Barber, Edwin Atlee, Curator, Pennsylvania Museum and School of Industrial Art, Memorial Hall, Fairmount Park, Philadelphia, Pa.

*Barbour, Edwin Hinckley, Curator of the State Museum and State Geologist of Nebraska, Lincoln, Neb.

*Beckwith, Paul Edmond, Assistant Curator, Division of History, U. S. National Museum, Washington, D. C.

Beatty, John W., Director, Carnegie Institute, Department of Fine Arts, Pittsburgh, Pa.

*Bennett, Miss B., Assistant to the Director, The Art Institute of Chicago, Chicago, Ill.

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[1] The list published has been furnished by the Treasurer, Dr. W. P. Wilson, and is brought down to the end of October, 1907. It is founded upon the records of the Treasurer's office. The Treasurer kindly requests those who may detect errors of name or address to inform him, that they may be corrected in future publications.

[2] Present address: University of Chicago, Chicago, Illinois.

*Berg, George L., Director, Washington State Art Association, Seattle, Washington.

Beutenmüller, William, Curator, Department of Entomology, American Museum of Natural History, New York, N. Y.

Bibbins, Arthur Barnweld, Director of the Museum, Woman's College, Baltimore, Md.

*Brigham, William T., Director, Bernice Pauahi Bishop Museum, Honolulu, H. I.

*Britton, N. L., Director-in-Chief, New York Botanical Garden, Bronx Park, New York, N. Y.

Brown, Arthur Erwin, Curator, Academy of Natural Sciences, Director, Zoölogical Gardens, Philadelphia, Pa.

*Bryan, William Alanson, Curator Ornithology, Bernice Pauahi Bishop Museum, Honolulu, H. I.

*Bumpus, Herman C., Director, American Museum of Natural History, New York, N. Y.

*Burchard, Edward L., Museum Organizer, Freeport, Ill.

*Clarke, Sir Caspar Purdon, Director, Metropolitan Museum of Art, New York, N. Y.

Coggeshall, Arthur S., Preparator-in-Chief, Section of Paleontology, Carnegie Museum, Pittsburgh, Pa.

*Collie, George L., Curator of the Logan Museum, Beloit College, Beloit, Wisconsin.

Comfort, George F., Director, Syracuse Museum of Fine Arts, Syracuse, N. Y.

*Comparette, T. Louis, Curator, Numismatic Collection, U. S. Mint, Philadelphia, Pa.

Cory, C. B., Curator of Zoölogy, Field Museum of Natural History, Chicago, Ill.

Dahlgren, B. E., Assistant Curator Invertebrate Zoölogy, American Museum of Natural History, New York, N. Y.

*Dean, Bashford, Curator Fossil Fishes, American Museum of Natural History, Curator Arms and Armor, Metropolitan Museum, New York, N. Y.

*Dorsey, George A., Curator of Anthropology, Field Museum of Natural History, Chicago, Ill.

Douglass, Earl, Assistant in Field and Laboratory Research, Section of Paleontology, Carnegie Museum, Pittsburgh, Pa.

*Dow, George Francis, Secretary and Curator of the Museum, Essex Institute, Salem, Mass.

*Dyche, L. L., Curator of Birds and Mammals, State University, Lawrence, Kansas.

*Eastman, Charles R., Curator of Vertebrate Paleontology, Museum of Comparative Zoölogy, Harvard University, Cambridge, Mass.

Failing, Henrietta H., Curator, Portland Art Association Museum of Art, Fifth and Taylor Sts., Portland, Oregon.

*Farrington, Oliver C., Curator of Geology, Field Museum of Natural History, Chicago, Ill.

Foulke, J. B., Administrative Assistant, American Museum of Natural History, New York, N. Y.

Fox, William Henry, Director, John Herron Art Institute, Indianapolis, Ind.

*French, William M. R., Director, The Art Institute of Chicago, Chicago, Ill.

*Gallup, Anna Billings, Curator, The Children's Museum, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.

*Gest, J. H., Director, The Cincinnati Museum Association, Cincinnati, Ohio.

*Gilman, Benjamin Ives, Secretary, Museum of Fine Arts, Boston, Mass.

Glenk, Robert, Secretary, Louisiana State Museum, 730 Carondelet St., New Orleans, La.

Glenn, L. C., Vanderbilt University Museum, Nashville, Tenn.

Goodale, George Lincoln, in Charge Harvard Botanical Museum, Harvard University, Cambridge, Mass.

*Goodyear, William H., Curator of Fine Arts, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.

*Gordon, G. B., Curator, Section of Ethnology, Free Museum of Science and Art, 33rd and Spruce Sts., Philadelphia, Pa.

*Greenman, Milton J., Director, The Wistar Institute of Anatomy, 36th and Woodland Avenue, Philadelphia, Pa.

*Griffin, Miss Delia Isabel, Director, The Fairbanks Museum of Science, St. Johnsbury, Vermont.

*Griffith, A. H., Director, Detroit Museum of Art, Detroit, Mich.

*Hall, Christopher W., Curator, Geological Museum, University of Minnesota, Minneapolis, Minn.

Hartman, C. V., Curator of Archeology and Ethnology, Carnegie Museum, Pittsburgh, Pa.

Hastings, George T., Assistant Curator, Philadelphia Museums, Philadelphia, Pa.

*Henderson, Junius, Curator of Museum, University of Colorado, Boulder, Colorado.

*Hitchcock, Charles H., Curator Butterfield Museum, Dartmouth College, Hanover, New Hampshire.

*Hollick, Arthur, Curator, Department of Fossil Botany, New York Botanical Garden, New York, N. Y.

*Hooper, Franklin W., Director, The Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.

*Hopkins, Anderson H., Librarian of the Carnegie Library of Pittsburgh, Pa.

*Hornaday, William T., Director and General Curator of the New York Zoölogical Park, New York, N. Y.

*Houston, S. F., President Department of Archeology, University of Pennsylvania, Philadelphia, Pa.

*Hovey, Edmund Otis, Associate Curator, Department of Geology, American Museum of Natural History, New York, N. Y.

Howe, Marshall A., Curator of the Museum, New York Botanical Garden, Bronx Park, New York, N. Y.

Hyett, William James, Assistant in Department of Fine Arts, Carnegie Institute, Pittsburgh, Pa.

*Jenkins, L. W., Curator of Ethnology, Peabody Museum, Salem, Mass.

Jennings, Otto E., Assistant Curator of Botany, Carnegie Museum, Pittsburgh, Pa.

*Johnson, Charles W., Curator, Boston Society of Natural History, Boston, Mass.

Kahl, Paul Hugo Isidor, Custodian of Entomology, Carnegie Museum, Pittsburgh, Pa.

Katzenberger, George A., Curator, Museum of Carnegie Library, Greenville, O.

Kent, Henry W., Assistant Secretary, Metropolitan Museum of Art, New York, N. Y.

*Kermode, Francis, Curator, Provincial Museum, Victoria, British Columbia.

*Kunz, George F., Honorary Curator of Gems, American Museum of Natural History, care Tiffany & Co., Fifth Avenue, New York, N. Y.

*Kurtz, Charles M., Director, Buffalo Academy of Fine Arts, Albright Art Gallery, Buffalo, N. Y.

*Lamb, Daniel Smith, Pathologist, Army Medical Museum, Washington, D. C.

*Letson, Miss Elizabeth J., Director of Museum, Buffalo Society of Natural Sciences, Buffalo, N. Y.

*Lindahl, Josua, Late Director of the Museum of the Cincinnati Society of Natural History, Station E, Cincinnati, O.

Loomis, Leverett Mills, Director of the Museum, California Academy of Sciences, San Francisco, California.

*Lucas, Frederick A., Curator-in-Chief, Museum of Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.

*MacCurdy, George Grant, Curator, Section of Anthropology, Yale University Museum, New Haven, Conn.

Mason, Otis T., Curator Ethnology, U. S. National Museum, Washington, D. C.

*McGee, W J, Director St. Louis Public Museum, St. Louis, Missouri.

*McGuire, F. B., Director, The Corcoran Gallery of Art, Washington, D. C.

Mead, Albert D., Professor of Comparative Anatomy, Brown University, Providence, Rhode Island.

*Mellor, Charles C., Chairman of the Committee on the Museum, Carnegie Institute, Pittsburgh, Pa.

*Mills, William C., Curator and Librarian, Page Hall, Ohio State University, Columbus, Ohio.

*Miner, Roy W., Assistant Curator of Invertebrate Zoölogy, American Museum of Natural History, New York, N. Y.

*Montgomery, Henry, Curator of Museum, University of Toronto, Toronto, Ontario.

Morris, E. L., Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.

*Morse, Edward S., Director, Peabody Museum, Salem, Mass.

*Morse, S. R., Curator, New Jersey State Museum, Trenton, New Jersey.

*Nachtrieb, Henry F., Curator Zoölogical Museum, University of Minnesota, Minneapolis, Minn.

*Nutting, Charles C., Curator, Museum of Natural History, State University of Iowa, Iowa City, Iowa.

Ortmann, Arnold E., Curator of Invertebrate Zoölogy, Carnegie Museum, Pittsburgh, Pa.

Perine, Miss Clara N., Assistant to the Director, The Wistar Institute of Anatomy, Philadelphia, Pa.

*Peterson, Harry C., Curator, Leland Stanford, Jr., Museum, Palo Alto, Calif.

Peterson, O. A., Preparator of Mammals, Section of Paleontology, Carnegie Museum, Pittsburgh, Pa.

Pflaum, Magnus, Custodian, American Microscopical Society, Pittsburgh, Pa.

Prentice, Sydney, Artist and Illustrator, Carnegie Museum, Pittsburgh, Pa.

Putnam, Edward K., Acting Director, Academy of Sciences, Davenport, Iowa.

*Putnam, Frederic W., Curator, Peabody Museum, Harvard University, and Director Anthropological Museum, University of California. Address, Cambridge, Mass.

*Rathbun, Richard, Assistant Secretary Smithsonian Institution, in charge U. S. National Museum, Washington, D. C.

*Rathman, C. G., Director Educational Museums, Ninth and Locust Sts., St. Louis, Missouri.

*Raymond, Percy E., Assistant Curator Invertebrate Paleontology, Carnegie Museum, Pittsburgh, Pa.

*Rea, Paul M., Director, The Charleston Museum, Charleston, South Carolina.

Robinson, Edward, Assistant Director, Metropolitan Museum of Art, New York, N. Y.

*Rothrock, Boyd P., Curator Pennsylvania State Museum, Harrisburg, Pa.

Santens, Remi H., Taxidermic Preparator, Carnegie Museum, Pittsburgh, Pa.

Schoff, Wilfred H., Secretary, The Philadelphia Museums, Philadelphia, Pa.

*Schuchert, Charles, Curator, Department of Geology, Yale University Museum, New Haven, Conn.

Shafer, John A., Custodian of the Museums, New York Botanical Gardens, Bronx Park, New York, N. Y.

*Sherwood, George H., Assistant Secretary and Treasurer, American Museum of Natural History, New York, N. Y.

*Skiff, Frederick J. V., Director, Field Museum of Natural History, Chicago, Ill.

Small, John K., Head Curator of the Museums and Herbarium, New York Botanical Garden, Bedford Park, New York, N. Y.

*Smith, T. Guildford, President Buffalo Society of Natural Sciences, Buffalo, N. Y.

Stewart, Douglas, Assistant to the Director, Carnegie Museum, Pittsburgh, Pa.

*Stone, Witmer, Assistant Curator, Academy of Natural Sciences, Logan Square, Philadelphia, Pa.

Stotsenburg, J. McPherson, Curator, Wistar Institute of Anatomy, Philadelphia, Pa.

Toothaker, Charles R., Curator, The Philadelphia Museums, Philadelphia, Pa.

*Tower, Ralph W., Curator of Physiology, American Museum of Natural History, New York, N. Y.

*Townsend, Charles H., Director, New York Aquarium, Battery Park, New York, N. Y.

Townsend, Louis H., Osteologist, Carnegie Museum, Pittsburgh, Pa.

*Ward, Henry L., Director, Public Museum of the City of Milwaukee, Milwaukee, Wisconsin.

Webster, Frederic S., Taxidermic Preparator, Carnegie Museum, Pittsburgh, Pa.

*Wilcomb, C. P., Curator Hall Museum of Anthropology, Aspinwall, Pa.

*Wilder, Burt Green, Curator of the Museum of Vertebrates, Cornell University, Ithaca, N. Y.

*Willoughby, Charles C., Assistant Curator, Peabody Museum, Cambridge, Mass.

*Wilson, W. P., Director, The Philadelphia Museums, 34th St., below Spruce, Philadelphia, Pa.

*Wissler, Clark, Curator of Ethnology, American Museum of Natural History, New York, N. Y.

Worth, William A., Director Educational Museum, 500 Park Avenue, New York, N. Y.

Zeller, August, Assistant, Department of Fine Arts, Carnegie Institute, Pittsburgh, Pa.

Zierden, Miss Alicia M., Curator, Division of Education, Pennsylvania State Museum, Harrisburg, Pa.

SUSTAINING MEMBERS

*American Museum of Natural History, 77th St. and Central Park, West, New York, N. Y.

*The Art Institute of Chicago, Chicago, Ill.

*Museum of Fine Arts, Boston, Mass.

*Brooklyn Institute of Arts and Sciences, Eastern Parkway, Brooklyn, N. Y.

*Carnegie Museum, Department of The Carnegie Institute, Pittsburgh, Pa.

*The Charleston Museum, Charleston, South Carolina.

*The Chicago Academy of Sciences, Lincoln Park, Chicago, Ill.

Cincinnati Museum Association, Cincinnati, Ohio.

*The Corcoran Gallery of Art, Washington, D. C.

*The Deseret Museum, Salt Lake City, Utah.

*The Fairbanks Museum of Natural Science, St. Johnsbury, Vermont.

*The Field Museum of Natural Science, Chicago, Ill.

*Free Museum of Science and Art, Department of Archeology, University of Pennsylvania, Philadelphia, Pa.

*John Herron Art Institute, Indianapolis, Ind.

*Metropolitan Museum of Art, New York, N. Y.

Museo Nacional de Bogota, Bogota, Colombia.

*New York Botanical Garden, Bronx Park, New York, N. Y.

*New York State Museum, Albany, N. Y.

Peabody Museum, Salem, Mass.

*Pennsylvania Museum and School of Industrial Art, Memorial Hall, Fairmount Park, Philadelphia, Pa.

The Philadelphia Museums, 34th St., below Spruce, Philadelphia, Pa.

*Public Museum of the City of Milwaukee, Milwaukee, Wisconsin.

Syracuse Museum of Fine Arts, Syracuse, N. Y.

University of Nebraska, Lincoln, Nebraska.

*Washington State Art Association, Seattle, Washington.

*Williams College, Williamstown, Massachusetts.

REPORT OF THE TREASURER OF THE AMERICAN ASSOCIATION OF MUSEUMS, PRESENTED AT THE ANNUAL MEETING, PITTSBURGH, JUNE 4–6, 1907

Receipts.

Active Membership fees for year ending May 15, 1907	$136.00
Active Membership fees for year ending May, 15 1908	86.00
Sustaining Memberships, year ending May 15, 1907	180.00
Sustaining Memberships, year ending May 15, 1908	70.00
Active Life Memberships	120.00
Total	592.00

Expenditures.

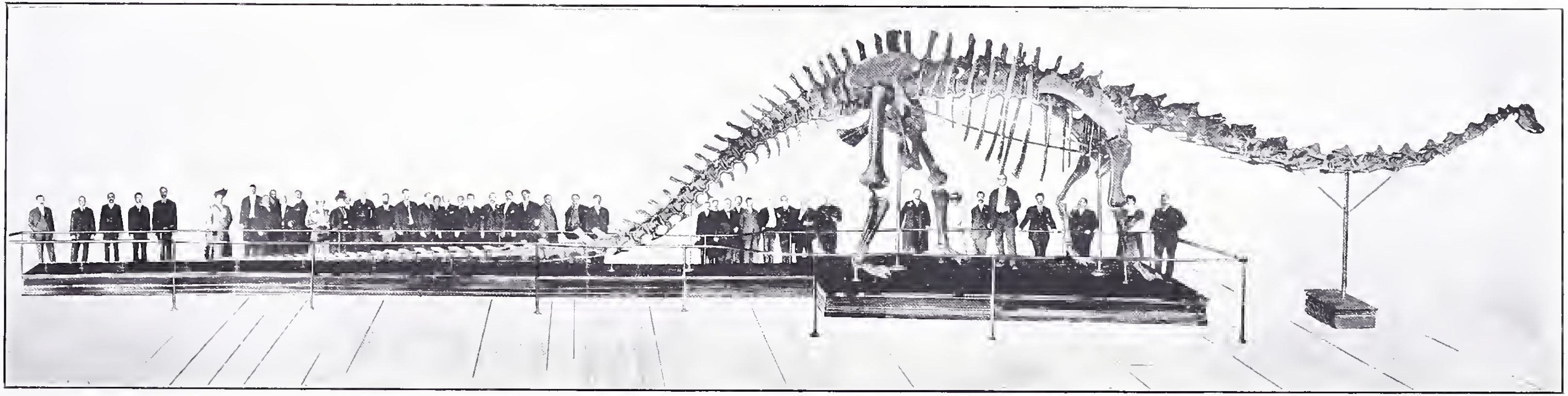
Jan. 10,	To Printing 150 receipt blanks	$1.50		
	To Printing 400 circulars	3.00	$4.50	
Jan. 26,	To 500 envelopes and 500 letterheads		3.00	
	To Postage stamps and telegram (Treasurer)		8.25	
May 8,	To W. J. Holland, Director Carnegie Museum (to issuing circulars, calling meeting in New York, 1906 and Postage)		21.25	
May 8,	To W. J. Holland (to bill of Murdoch, Kerr & Co. for printing 1,000 copies Organization and Minutes of First Meeting, May 15 and 16, New York		55.75	
	To bill J. C. Bragdon, half tone cut for pamphlet		3.50	
	Postage on 200 copies		4.00	
	Total			100.25
	Balance in Treasury, June 4			$491.75

Summary.

Total receipts to date (June 4, 1907)	$592.00	
Expenditures to date (June 4, 1907)	100.25	
Balance in Treasury		$491.75
June 6, Expenditures and vouchers handed in by Dr. Dorsey		19.05
Final balance		$472.70

W. P. Wilson,
Treasurer.

Examined and found correct:
O. C. Farrington,
T. L. Comparette,
Henry L. Ward,
Auditing Committee.



MEMBERS OF THE AMERICAN ASSOCIATION OF MUSEUMS ASSEMBLED ABOUT THE SKELETON OF DIPLODOCUS CARNEGIEI IN THE CARNEGIE MUSEUM, JUNE 5, 1907

PROCEEDINGS
OF THE
Second Annual Meeting
OF THE
American Association of Museums
HELD AT
The Carnegie Institute, Pittsburgh, Pa
June 4-6, 1907

SESSION OF TUESDAY, JUNE 4

Morning

The Association came to order in the Lecture Hall of Science in the Carnegie Museum at 10 A. M., President Hermon C. Bumpus in the chair.

Dr. W. J. Holland, Director of the Carnegie Museum, said: "Mr. President, on behalf of the Local Committee of Arrangements I wish to inform you that we expected to have his honor, Mr. George W. Guthrie, the Mayor of the City of Pittsburgh, with us to welcome the Association this morning. The pressure of important engagements has prevented his presence, but he has kindly requested Mr. James Rodgers McCreery, a Pittsburgher 'to the manor born,' one of the leading members of the bar of this city, to represent him, and I now have the honor of introducing Mr. McCreery to you."

Mr. McCreery.—"Mr. President, Ladies and Gentlemen of the American Association of Museums; after the flattering introduction given me by Dr. Holland it would hardly become me to speak, were it not for the fact that I stand here to represent his honor, Mayor George W. Guthrie. As Dr. Holland has stated, the Mayor discovered at the last moment that he would be deprived of the great pleasure of welcoming you in person, and in view of the impossibility of being here owing to the stress of public business, he requested me to represent him and in his name to extend to you his own welcome and the welcome of the citizens of this city.

" I am glad that this Association has chosen Pittsburgh as the place of its second annual meeting, and I can assure you that the glad hand of fellowship and hospitality will be extended to the best of our ability.

" When I asked the Mayor where the keys of the city of Pittsburgh were, as I desired to bring them with me, and present them to you, he said that when the walls of the city had been built and its gates erected, the workmen had forgotten to close and lock the doors. The keys have been lost, and, unless Dr. Holland in his search for another Diplodocus should come across them, it will be impossible to find them.

" Again in the name of the Mayor I welcome you to Pittsburgh."

Dr. Holland.—" Mr. President, Ladies, and Gentlemen: On the preliminary programme printed by the Local Committee of Arrangements, which is in your hands, you will see the statement that an address of welcome on behalf of the Trustees of the Carnegie Institute is to be made by Mr. W. N. Frew, the honored and beloved President of the Board of Trustees of the Carnegie Institute. But last night by telephone he informed me that owing to indisposition (a bad cold) it would be impossible for him to be present this morning, and, as the result of a conspiracy by my fellow members of the committee, I have been thrust into his place.

" On behalf of the Carnegie Institute I welcome you. I suppose that you have already learned that the Carnegie Institute is a complex of institutions. The original thought of the generous founder was the establishment of a library, but when he came to address himself to the task, which he had proposed to himself, he decided that he would do more than that. Having given to the city of Allegheny a library building, in which provision had been made for a small art-gallery and a hall, in which musical entertainments could be given, he decided that he would do as much for Pittsburgh. He invited a number of his friends into conference with himself and finally announced that in addition to the library he would make provision for an auditorium capable of comfortably seating a large audience, would provide the best organ which could be put in the place selected for it, would make ample provisions for an art-gallery and also for a museum and a smaller lecture-hall in which the Academy of Science and Art and allied societies would have a place for meeting. In 1895 the building was formally turned over to the custody of the Trustees acting on behalf of the people of the city, who engaged to maintain the library. On that occasion Mr. Carnegie announced his intention of himself providing for the maintenance of the Art-gallery and the Museum and presented to the Trustees a million of dollars, the income to be used for the support of these two departments of activity. Not long afterwards he increased the endowment of the Art-gallery and the Museum by the gift of another million. But growth was rapid. It soon became apparent that the original edifice was too small. Mr. Carnegie then came forward with the proposal to apply the noble sum of five millions of dollars for enlarging the building. While this work was being done he determined to add another department of activity, and offered to provide the means for giving an industrial education along the lines of the Pratt Institute in Brooklyn and other similar schools to the young people of this community who have not enjoyed early advantages. He provided the money to erect the buildings and an endowment fund of two millions of dollars for this purpose. Recently he has increased the endowment of the Institute by the gift of four millions of dollars and has promised to add to this two millions to be specifically applied to the uses of the Technical Schools.

"About six weeks ago the splendid structure in which we are assembled was dedicated with appropriate ceremonies. The edifice represents an outlay of over six millions of dollars. It covers an area larger than that occupied by the Capitol in Washington by half an acre. There are fifteen acres of floor room under the roof. I am not including in this statement the Technical Schools, which occupy separate buildings on the opposite side of the ravine. The whole complex of enterprises is devoted to one great and noble purpose, the promotion of culture, and thus the promotion of the happiness of the people. The cultivation of the mind by making good literature accessible is sought for through the Library, in which more than a quarter of a million of volumes have already been assembled. Musical culture and enjoyment is provided in the Hall of Music, where one of the most superbly skilful masters of the art of music wields his baton over one of the most successful orchestras which has been assembled on the soil of the new world, and where every Saturday evening and every Sunday afternoon the public without charge are enabled to hear on the organ choice renditions of the works of the masters. Let me relate an incident in this connection. Not long ago a man spoke to a friend of mine in reference to these organ recitals, using substantially these words: 'I cannot sufficiently thank Andrew Carnegie for what he has done for the people of Pittsburgh in making music free to the people. I have been passing through a terrible struggle. I have been for two years on the apparent verge of bankruptcy. The strain upon my mind was at times almost too great to be borne. I resorted to the organ recitals for mental relief and comfort. I came to them as Saul came to hear the sweet harp of David and found strength and courage. I am through my conflict and have won, but I really believe I should not have done so had it not been for the refreshment and rest I found in this Hall of Music.'

"Then we have the Art-gallery which speaks for itself and for its Director, who is a member of our Association. You have been told in the art-journals and reviews that the present international exhibition is the most notable display of contemporary art which has been shown on this continent since the great exposition at St. Louis occurred.

"Of the Museum I may be allowed in this presence to speak freely. Its work represents only the beginning of what we hope to accomplish, but this beginning has in it, I think you will grant me, promise of much for the future. We have done a few things of which we may justly be proud. We have made mistakes, and some things which have been done well might have been done better. I do not wish any of you in passing through these halls to imagine that you are looking upon what we conceive to be final installation. The work of assembling our material and displaying it had to be done hastily. Seven weeks ago my colleagues on the staff of the museum and I were simply in despair. There was confusion everywhere, everywhere dirt and disorder, and Founder's Day only a week off. The day before the dedication it seemed to me impossible that things could be put into good shape, but energy won the day, and at least a semblance of order was attained. You will find many things as yet without labels. We have not had time to write and print them all. You will find many incongruities. The hand of time will adjust these things. We are alive to our shortcomings and our faults. Our work, as I have said, is still in its infancy, but in the field of scientific research, which is the chief glory of a museum, we have done work which I think may be regarded as having been highly successful and important.

" Of the technical schools it is hardly necessary for me to speak. These schools stand for effort on behalf of the poor boy or girl who have not had a chance. There are over a thousand students enrolled, principally in the night classes. These schools are doing good work already.

" The whole complex of interests represents the benevolent purpose of one of the greatest captains of industry of this age, whose story is more wonderful than the tales of Eastern romance. His intent is to do good to his fellow men by giving them the means of acquiring knowledge, and of imparting to them the sweetness and joy of life.

" Once more on behalf of the Carnegie Institute and on behalf of its Trustees and Officers I cordially welcome you."

Dr. Bumpus.—" Mr. McCreery; we are very glad to welcome you as the representative of the honorable Mayor, and wish you to convey to him our compliments, and state that it is a great pleasure to meet in this city, a city which is so picturesquely adumbrated. We thank you for your hospitable greeting. We selected the city of Pittsburgh as our place of meeting, prompted in part by the fact of its most convenient geographical position. We would be much pleased to have you convey to the Mayor our congratulations on the selection of the site of the city. In our youth we only knew of the city because of its location at the junction of the Monongahela and the Allegheny rivers; now in our later years we find the city at times literally inundated by both of these rivers.

" I think there are here many who cherish the fond hope that somewhere a national museum of industry may be established. In such a museum, when finally established, it seems to me that Pittsburgh will occupy the position of the Diplodocus, revealing the fact that above all others it is suited for industrial development and the achievement of industrial success.

" Dr. Holland; in accepting the invitation which was brought to us at the meeting in New York from the Trustees of the Carnegie Institute by you, the acceptance was made, because in the first place we felt that we would be welcome in Pittsburgh, in the second place because it was our desire to visit the museum, which was to be opened about the time of our next meeting. We chose Pittsburgh, and accepted the invitation of the Carnegie Institute by a unanimous vote. It is a real satisfaction to visit an institution of this kind. I think that our profession rather inclines us to accept the theory of gradual development, and to give up the idea of special creation, but on coming here, one gets the impression that special creation prevails at certain times. We see before us a great institution which has been called into being, as it were, by almighty fiat, and we realize that some one has labored all of the six days, and has possibly invaded the seventh, though entitled in it to rest.

" When the preliminary programs, which are in our hands, were distributed, though we knew that we were to be entertained in a most palatial structure, we were at once impressed by the superb character of the entertainment provided for us by the committee having the local arrangements in their charge. Representatives of other museums, who have come here prepared to urge that the next annual meeting shall be held in their city, have said: 'We would be delighted to extend an invitation to you, but we are afraid we cannot hope to offer such entertainment as Pittsburgh has provided.' Will you not receive for yourself and for the Committee of Arrangements our compliments, and express to all who have in any way prepared to make our visit among you agreeable and profitable, our sincere appreciation of the generous hospitality intended and shown.

" As a member of the Association I cannot refrain from personally expressing the feeling of gratification which I have in view of the fact that so many members have made a successful effort to be present at this meeting. There are those here who have undertaken to make a journey of three or four thousand miles for the privilege of being here a few hours, so I take it for granted that the more punctual we are in getting to work the greater will be the satisfaction. I therefore pronounce the Second Annual Meeting of the American Association of Museums in session, and we will proceed with the regular order of business."

The Secretary requested Dr. Holland, who had prepared a list of those who had signified their intention to be present to call the roll. This was done, and the following members were ascertained to be in attendance:

Charles C. Adams, University of Cincinnati, Cincinnati, Ohio.
C. E. Akeley, Field Museum of Natural History, Chicago, Illinois.
F. C. Baker, Chicago Academy of Sciences, Chicago, Illinois.
John W. Beatty, Department of Fine Arts, Carnegie Institute, Pittsburgh, Pa.
George L. Berg, Washington State Art Association, Seattle, Washington.
Hermon C. Bumpus, American Museum of Natural History, New York City.
Arthur S. Coggeshall, Carnegie Museum, Pittsburgh.
T. L. Comparette, U. S. Mint, Philadelphia, Pa.
A. R. Crook, Illinois State Museum, Springfield, Illinois.
Miss Anna M. Deens, Pittsburgh High School, Pittsburgh, Pa.
George A. Dorsey, Field Museum of Natural History, Chicago, Illinois.
Earl Douglass, Carnegie Museum, Pittsburgh, Pa.
George Francis Dow, The Essex Institute, Salem, Mass.
Carl H. Eigenmann, Indiana University, Bloomington, Indiana.
O. C. Farrington, Field Museum of Natural History, Chicago, Illinois.
Wm. M. R. French, The Art Institute of Chicago, Chicago, Illinois.
Miss Anna B. Gallup, Children's Museum, Brooklyn Institute, Brooklyn, N. Y.
Benjamin Ives Gilman, Museum of Fine Arts, Boston, Mass.
Milton J. Greenman, Wistar Institute of Anatomy, Philadelphia, Pa.
Miss Delia I. Griffin, Fairbanks Museum of Natural Science, St. Johnsbury, Vermont.
Robert C. Hall, Hall Museum of Anthropology, Pittsburg, Pa.
C. V. Hartman, Carnegie Museum, Pittsburgh, Pa.
Charles H. Hitchcock, Butterfield Museum, Dartmouth College, Hanover, N. H.
W. J. Holland, Carnegie Museum, Pittsburgh, Pa.
Anderson H. Hopkins, Carnegie Public Library, Pittsburgh, Pa.
Marshall A. Howe, New York Botanical Garden, New York, N. Y.
William J. Hyett, Department of Fine Arts, Carnegie Institute, Pittsburgh, Pa.
Lawrence W. Jenkins, Peabody Museum, Salem, Mass.
O. E. Jennings, Carnegie Museum, Pittsburgh, Pa.
Paul Hugo Isidor Kahl, Carnegie Museum, Pittsburgh, Pa.
Charles M. Kurtz, Albright Art Gallery, Buffalo, N. Y.
Rev. A. A. Lambing, Carnegie Museum, Pittsburgh, Pa.
Miss Elizabeth J. Letson, Buffalo Society of Natural History, Buffalo, N. Y.
F. A. Lucas, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
W. D. Matthew, American Museum of Natural History, New York, N. Y.
C. C. Mellor, Carnegie Institute, Pittsburgh, Pa.
Edward S. Morse, Peabody Academy of Sciences, Salem, Mass.
W J McGee, St. Louis Public Museum, St. Louis, Missouri.
A. E. Ortmann, Carnegie Museum, Pittsburgh, Pa.
O. A. Peterson, Carnegie Museum, Pittsburgh, Pa.
Magnus Pflaum, Pittsburgh, Pa.
Sidney Prentice, Carnegie Museum, Pittsburgh, Pa.
Percy E. Raymond, Carnegie Museum, Pittsburgh, Pa.
P. M. Rea, The Charleston Museum, Charleston, S. C.

Boyd P. Rothrock, Pennsylvania State Museum, Harrisburg, Pa.
R. H. Santens, Carnegie Museum, Pittsburgh, Pa.
Charles Schuchert, Yale Museum, New Haven, Connecticut.
J. A. Shafer, New York Botanical Garden, New York, N. Y.
W. H. Schoff, The Philadelphia Museums, Philadelphia, Pa.
Douglas Stewart, Carnegie Museum, Pittsburgh, Pa.
J. M. Stotsenburg, Wistar Institute of Anatomy, Philadelphia, Pa.
J. E. Talmage, Deseret Museum, Salt Lake City, Utah.
L. H. Townsend, Carnegie Museum, Pittsburgh, Pa.
Henry L. Ward, Milwaukee Public Museum, Milwaukee, Wisconsin.
Frederick S. Webster, Carnegie Museum, Pittsburgh, Pa.
C. P. Wilcomb, Hall Museum of Anthropology, Pittsburgh, Pa.
W. P. Wilson, Philadelphia Museums, Philadelphia, Pa.
August Zeller, Department of Fine Arts, Carnegie Institute, Pittsburgh, Pa.
Miss Alicia M. Zierden, Pennsylvania State Museum, Harrisburg, Pa.

Upon motion the formal reading of the minutes of the last meeting, printed copies of which were in the hands of the members, was omitted and the Chair called for any amendments or suggestions looking to change, which those present might desire to propose. Professor J. E. Talmage called attention to a typographical error in the Constitution on page 13 of the Minutes in the paragraph of the Article on Membership, which relates to Honorary Members. Instead of the word "selected" in the fourth line of the paragraph he stated that the word "elected" should occur. Upon motion it was ordered that this change be made, and that this paragraph be so printed in future editions of the Constitution. The minutes of the first annual meeting were then upon motion approved.

The Chair called attention to the fact that the first clause of the Article on Membership in the Provisional Constitution provides that all persons who might in any way have signified their willingness to become members of the Association and who might have paid their dues within six months after May 15, 1906, should be recognized as "Charter Members." The Chair stated that the Council, in view of the delay which had occurred in publishing the Minutes of the last meeting, had somewhat arbitrarily extended this time to nine months, and asked the Association to ratify the action of the Council.

Upon motion of Dr. W. J. Holland it was

"*Resolved,* That the privilege of being included in the number of those who are entitled to regard themselves as 'Charter Members' of the Association be extended so as to include all who may have been present at the first meeting and who may be present at this meeting, and who have qualified by paying their dues for the year 1906–7; and that the clause of the Provisional Constitution be modified accordingly."

The Chair explained that the Constitution adopted at the last meeting of the Association was adopted provisionally, and that the Council had been made a Standing Committee upon the Constitution, with instructions to report at this time any changes or alterations which might seem desirable. He stated that except for the matters just fixed by the action of the Association no changes had been called for, and announced that by common consent, unless objection be made, the Constitution will be accepted as having been finally approved and adopted. There being no objection, the Chair stated that the Constitution is adopted finally.

The Chair called attention to the fact that certain resolutions which had been presented at the last meeting and referred to the Council had been relegated to committees appointed by the Chair, with the request that these committees would report at this meeting. The first resolution is as follows:

"*Resolved,* That it is the sense of this Association that the American Association of Museums should be allied with the National Educational Association."

"*Resolved,* That a special committee of three be appointed to confer in reference to the foregoing suggestion with the authorities of the National Educational Association, and report at their convenience to the Association or to the Council."

The Chair stated that, owing to absence from the country during the greater part of the last fall and winter, Director Skiff, who had introduced the resolution, had been unable to serve on the committee, and that Dr. W. H. Goodyear had been therefore asked to act as chairman. But Dr. Goodyear has recently gone abroad, and there does not therefore seem to be any one present to report. "Perhaps it would be best to let the matter go over for a year, and it seems to the Chair at all events that a proposal for affiliation should come from the older and larger association."

Dr. W J McGee.—"Mr. President; it happened that I had a conversation with Mr. Skiff about the time this resolution was introduced. I was impressed by the fact that the National Educational Association is organized with subdivisions into departments or sections in such a manner as to allow the various lines of educational activity in this country to be represented. There is, however, no recognition, as yet, of the activity of museums. Now, Mr. President, some of us regard museums as representing a coming type of educational institutions. Museums have been developing and increasing with greater rapidity than any other institutions in recent years. The question is raised by the Chair whether it would not be best to allow the matter of affiliation with the older and larger society to be brought forward by that body. Knowing the circumstances, as I do, it is quite clear to my mind, that, if such a department or section in the National Educational Association is to be formed, museum men should see to its erection. The time is opportune for the movement, whether it be undertaken by this body or by men identified with museums, who may take the matter up independently. For myself I think that a committee from this Association should take immediate action in the premises. Accordingly I am of the opinion that it would be well for this Association at this meeting to reorganize our committee, and having first made my argument, I now move you, sir, that the President of the Museums Association of America be authorized to appoint a committee to act pursuant to the original resolution."

The motion was seconded by Dr. W. M. R. French.

Dr. E. S. Morse.—" Mr. President; I desire to say that the point raised by yourself commends itself to my mind. The American Educational Association has a membership of fully five thousand. Our Association is still small in numbers, and in a certain sense is in its infancy, though vigorous. It seems to me that it would be more dignified for us to wait for an invitation to come to us from the larger and older society."

Dr. George A. Dorsey.—" Mr. President; I do not think that the American Association of Museums is going to be as timid in matters of this sort as Professor Morse apparently thinks that it ought to be. If we sit and wait for an invitation to come to us from the National Educational Association, we might have to wait a long time. I think I know perhaps as much as any other person about what Mr. Skiff had in his mind when he offered the resolution which has led to the present discussion. I know that he has talked the matter over with several of the prominent members of the National Educational Association. They agree with him that it is desirable to found a section in that Association devoted to museums and museum interests, and it seems to me that it is quite right for us to endeavor to help that idea along."

After an opportunity had been given for further remarks, the motion was put by the Chair and unanimously carried.

The Chair announced that he would appoint as the committee upon the resolution Dr. W. J. Holland, Dr. W J McGee, and Dr. George A. Dorsey.

The Chair.—" At the meeting in New York Mr. O. C. Farrington submitted the following resolution:

" '*Whereas,* Museums are institutions devoted to public welfare and to the discovery and dissemination of knowledge, and their curators devote themselves to the cause of popular education, therefore the American Association of Museums hereby

" '*Memorializes* the Trustees of the Carnegie Foundation for the Promotion of Teaching, requesting the admission of the curators of American museums to the privileges of this foundation under such regulations as shall hereafter be agreed upon by a committee of this Association and the Trustees of the Foundation.'

" A committee consisting of Dr. W. J. Holland, H. C. Bumpus, Henry F. Osborn, Benjamin Ives Gilman, Edward S. Morse, F. J. V. Skiff, W J McGee, W. M. R. French and Sir Caspar Purdon Clarke was appointed to take this matter up. Will Dr. Holland report for this committee? "

Dr. W. J. Holland.—" I am forced to stand before this meeting and say *peccavi!* I am guilty of the sin of having omitted formally to bring the resolution referred to the excellent committee of which you honored me with the chairmanship, before the Trustees of the Carnegie Foundation. Nevertheless, I may say that I have had some conversation with a couple of the gentlemen charged with the administration of that trust. I gathered from what was said to me that there is but little reason to hope that the trustees will regard those who are concerned in the work of museums as coming within the scope of the fund. I think the thought of the trustees of that excellent foundation is that its benefits should be restricted to those who are engaged in work of a strictly pedagogic character. However, the matter may be fully and authoritatively determined, and if you will accept this brief statement as being in the nature of a report of progress I can assure you, that now that the work of putting this museum into something like order has at last been accomplished, I will have more time at my command, and will be pleased to endeavor to obtain a definite answer to the application which our Association desires to be made. The claims of those who are engaged in the educational work which museums are doing are certainly worthy of attention."

Upon motion the report was accepted and the committee continued.

The Chair.—" The next resolution presented at the last meeting of the Association was offered by Dr. George A. Dorsey. It is as follows:

" '*Resolved,* That a Special Committee of three be appointed by the Chair to consult with the proper authorities for the purpose of endeavoring to secure fourth-class postal rates upon the publications of museums and other educational institutions, in cases in which such publications are distributed gratuitously, but cannot be issued at stated intervals of time.'

" I call upon Dr. Dorsey to explain the resolution, explaining the necessity for such action, and to report what has been done since the last meeting."

Dr. Dorsey.—" Mr. President; I have spent some time in correspondence with the officials in Washington, and have obtained a good deal of information from our own and other museums. I have a report to make, but as I have not had an opportunity since I arrived this morning to get at my papers, I ask you to hold this matter over until later in our session."

The Chair.—" Mr. W. A. Bryan presented a resolution which was referred to the Council at the last meeting. It related to the establishment of some form of journal, which should be the official organ of this Association. The resolution empowered the Council to appoint an editor and assistant editor and to take all steps which might seem to be necessary in the premises. I will ask Dr. J. E. Talmage to report for the Council."

Dr. Talmage.—" The Council has discussed the matter of the establishment of a periodical, which might serve as the official organ of this Association, and is of the opinion that circumstances do not at present warrant the establishment of a periodical of the sort, which apparently was in the minds of those who proposed and supported the resolution we are considering. The work of our Association is only in its beginning. The funds at our command are not sufficient to justify us in so large an undertaking as this necessarily would be. Besides there are other journals which may be made the channels of publication for such papers as we may desire to have given to the public. A further consideration of the matter in the light of experience may enable the Association in the near future to act along the lines suggested in the resolution, but the Council is decidedly of the opinion that the time has not yet quite arrived to embark upon so important an undertaking."

Dr. Holland.—" As a member of the Council I desire to say that our position has been stated by Dr. Talmage with absolute correctness. To start a journal or periodical involves a considerable outlay of money at the beginning, as every one who has had experience in such matters knows. Our treasury is in a healthy condition, but our funds, as the report of the Treasurer will show, are far from being vast, and they are not accumulating rapidly, nor can they. To undertake the publication of a monthly or bi-monthly journal would involve the initial outlay of several thousands of dollars at least. I do not think it would be right to lay a burden of indebtedness upon the association, which has just been organized; more especially, as has been pointed out by Dr. Talmage, when journals already well established are willing to grant us the use of their columns for the discussion of matters relating to the activities of the museums represented here. I am in receipt of a very kind letter from the editor of *Science,* in which he expresses the hope that full and accurate reports of the proceedings of the present meeting of the American Association of Museums will be sent to that excellent journal for publication. I have no doubt that any papers of special interest discussing matters of museum technique would also be thankfully accepted by *Science.*

" There is a great difference between the establishment of a regular periodical and the publication of full reports of the proceedings of our meetings. I think it is desirable that a permanent record of our proceedings should be maintained. It fell to me to edit in part the thin pamphlet which is in your hands and which contains an account of our last meeting. I sincerely hope that the way may be found to publish something better and fuller in reference to the present meeting. At the last meeting only a few of the papers were submitted in manuscript. I trust that every one who presents a paper at this meeting will hand in the manuscript to the secretary, and that briefs of all remarks made by those who take part in our discussions will also be presented, so that a full and accurate report may be prepared and printed. The proceedings of this meeting ought to be printed, and will, I think, make a creditable volume. If we succeed in doing as much as this we shall have accomplished a great deal."

Benjamin Ives Gilman.—"Mr. President; while it is true that papers read before this Association can find preservation in various journals, and more particularly in journals of science, it is well to recall that not a few of the gentlemen here present are not directors and curators of museums of science. I represent a museum of art, and it has seemed to me from the start that we should have some sort of a periodical through which there might be an exchange of ideas and in which the salient features of papers presented at our meetings might be preserved. We listen to a paper, carry away an impression, and then perhaps after six months have passed, we wish to refer to it to get some definite statement of fact. We discover that the paper has been published in some weekly or monthly which is not at our elbow. We are disappointed and inconvenienced. With all due deference to Dr. Holland, I do not think that it will be necessary for the Association to expend thousands of dollars in doing what I think we desire to have done. We can accomplish all we desire for a very much smaller sum than one thousand dollars. We wish a medium of communication, at all events a medium for the preservation in permanent form of the discussions at these meetings, if only in abstract. If we cannot have it in the form of a monthly or quarterly, would it not be possible to publish a volume of proceedings, which would be useful to members in days to come? I think it most essential that we should have some medium of publication, however inexpensive, and that we should begin it now."

J. E. Talmage.—"The action which was taken by the Association at the last meeting in referring the resolution under discussion to the Council, instructing them to take under advisement the matter of preparing some form of publication and appointing an editor and associate editor, did not necessarily imply that the Association intended the Council to appoint an editor and associate editor and to make arrangements for the publication of the proceedings of the present meeting. The resolution simply instructed the Council to take the matter 'under advisement.' This the Council did, and in the report on behalf of the Council which I have submitted to you the Council states that it did not deem it wise to undertake the publication of a journal or periodical appearing at stated intervals. The Council followed the instructions of the Association and returns a negative recommendation, but qualifies its report by the statement that perhaps a way may be found to meet the desires of the Association in the near future."

The Chair.—" As the Chair understands, the matter still rests in the hands of the Council to be solved."

W J McGee.—" I would like to secure an expression on the part of those present, and would therefore move that the resolution in the hands of the Council be again adopted, with the addition of the words, ' during the ensuing year.' In order that no person may be in doubt as to the nature of the motion, I will read the resolution as I would like to have it adopted: ' *Resolved,* That it is the sense of this meeting that the Council of the American Association of Museums be instructed to take under advisement the matter of preparing some suitable form of publication which shall be the official organ of this Association, and that it is hereby empowered to appoint an editor and associate editor and to make all necessary arrangements during the ensuing year for the publication of such museum journal as they may deem necessary.' "

A Member.—" Does that resolution imply that a periodical journal be published, or that the suggestion of Dr. Holland that the papers read at this meeting may be published as a volume of annual proceedings, be carried out? "

W J McGee.—" My understanding is that under the resolution the form of the publication will be left to the decision of the Council."

Dr. W. J. Holland.—" Mr. President; there is a very great difference between publishing a report of the proceedings of a meeting like this and establishing a journal which is to appear periodically as a monthly, bi-monthly, or quarterly. The papers read at this meeting would contribute something to the filling out of the pages of such a periodical journal, but there would not be enough supplied at such a meeting to justify the publication of a journal to run continuously through a year. The editor would have to solicit contributions. A quarterly or a monthly journal would probably require some illustration. A great deal of the time of the editor would have to be devoted to the work. The position of an editor is not altogether an agreeable one. Even when a large quantity of material is supplied to him he is under the necessity of making a wise selection; not everything which comes to his hands is fit for publication in the form in which it is presented. Articles often lack literary style and finish, and sometimes when possessing literary style articles lack substance. I frankly say that I would not like to be the editor of a journal such as evidently is in the thought of the minds of some who are here present unless I had autocratic powers and considerable financial resources at my command. There is a field for such a journal in America, but this publication would at the outset be a losing proposition. The experience of those who have embarked in such undertakings is discouraging. Only ten or twelve per cent. of ventures of this sort succeed, and that only temporarily. I for one am firmly of the opinion that instead of attempting to publish a periodical it would be better for us, as I have already suggested, to confine ourselves to the publication in reasonable fulness of the proceedings of our annual meetings including the papers read before the Association."

A Member.—"No one among the members of this Association, it seems to me, has time to devote to the editorial work which would be called for by the publication of a journal."

F. A. Lucas.—"Mr. President; I am quite convinced that Dr. Holland's idea that a volume of proceedings covering the papers at this meeting would be the safest thing to undertake."

Dr. W. P. Wilson.—"I think it wise that this matter should be, as provided under the resolution, referred to the Council for determination. It may be of interest to know that there are in the treasury at the present time over four hundred dollars. The papers to be presented at this meeting are numerous; to publish all of them in a single volume might possibly require a small subscription from those who are present. I am quite certain that four hundred dollars will not pay for the publication of an annual volume containing a large number of papers in a considerable edition. I do not oppose the publication of a journal or a volume of proceedings, but I desire that the members of the Association should know the amount of money which is in the treasury, and of course I should oppose expending any money not in the treasury. I take it for granted that I am not to be Treasurer after this session of the Association."

Dr. George A. Dorsey.—" It appears to me that we are not ready to undertake the publication of a periodical journal, but do want some sort of a volume of proceedings. It seems to me that the simplest thing would be to instruct the Council to print a volume covering the proceedings of this meeting, and that the President of this meeting and the two Vice-presidents should be a committee upon publication with authority to appoint an editor, who might undertake to canvass for the volume and print it, provided the Treasurer has sufficient funds. I think the power of the editor should be very much limited, and that he should be controlled by a committee consisting of the President and two Vice-presidents. I do not think that any one man should have power to reject and cut up a manuscript."

After considerable further discussion, in which various members took part, it was finally

"*Resolved,* That it is the sense of this meeting that the Council be instructed to take under advisement during the ensuing year the matter of preparing some suitable form of publication which shall be the official organ of this Association, and is hereby empowered to appoint an editor and associate editor, if necessary, and to make arrangements for the publication of such journal or volume of proceedings as may be necessary."

The Chair.—" At the meeting of the Council in New York a committee was appointed consisting of Dr. W. J. Holland, Messrs. Halsey C. Ives, W. M. R. French, George F. Kunz, Edward Robinson, and Benjamin Ide Wheeler, to endeavor to coöperate on behalf of this Association with representatives of other educational institutions in an endeavor to secure the repeal of the duty now imposed by the United States Government upon works of art coming from abroad. This committee is not prepared to report, but will be continued.

" A committee consisting of Messrs. Rathbun, Wilson, and Henshaw was appointed at the last meeting of Council to endeavor to secure special privileges of transportation on vessels belonging to the United States Government for collections destined to be placed in the museums of the United States. The only member of that committee present, I believe, is Dr. Wilson. Will he report? "

Dr. Wilson.—" In the absence of the other gentlemen who were associated with me on the committee I am not able to do anything but report progress, and request that the committee be continued."

This was agreed to.

The chair announced the appointment of a Committee on Program, consisting of Messrs. Lucas, Talmage, and French, and announced that this committee would designate the time for the presentation of all papers which the members might desire to read during the coming sessions.

Mr. Lucas, for the Committee on Program, announced that the first paper which would be read is a paper on "Labelling in Museums," presented by Mr. Henry L. Ward, Director of the Milwaukee Public Museum.

THE LABELLING IN MUSEUMS

The many museums of the country exhibit great divergencies in the extent to which labelling is carried. In some the specimen having a label that can be seen by the visitor is an exception; in others they are more numerous, but are a mere mention of name and locality; and so they pass through various degrees of utility to the public, until we arrive at a stage where the label entirely overshadows the specimen, and the exhibit partakes most decidedly of the nature of a text-book illustrated by specimens.

I have heard a museum curator express the opinion that labels were useless to the public, as they did not care to read them; and we are all aware that certain visitors will chase an attendant half the length of a large hall to ask about a specimen, the well-printed label of which tells precisely what he wishes to know. Notwithstanding such occurrences, I am of a sufficiently optimistic turn of mind to believe that the average museum visitor wishes to know something about what he is viewing and will avail himself of the opportunity to learn, provided it can be done without too much exertion to eye or brain. If such is the case, then the name and locality labels alone will not be of much value to him, while the extended text-book system will weary and discourage one not an enthusiast. The student to whom the latter system might be expected to appeal is presumably in personal possession of text-books; so that the system would be largely wasted on him, and the repellantly pedantic impression that it makes upon the average citizen does, I believe, more than offset its ideal usefulness. For some reason when people have ceased to attend school few of them like to go back to it.

I believe that in the art of label writing, than which there is probably no more important nor difficult task that falls to the lot of a curator, it is to be accepted as a cardinal principle that one should avoid pedantry, or the appearance of trying to teach; and, nevertheless, that sufficient teaching should be accomplished to enable the visitor to take an intelligent interest in the exhibits.

At one time I fancied that people would certainly wish to know more about things of which they already had some knowledge than about those of which they had very little, and that they would read short biographical sketches, about two hundred and fifty words in length, attached to groups of sea lions, bison, musk oxen, wapiti, etc., with greater avidity than similar labels placed on a collection of Wisconsin pearl-bearing naiades and free pearls, or much shorter, but more technically descriptive, individual labels on a series illustrating the evolution of the gun. Such, however, I find not to be the case, and the probable reason seems to be that a certain degree of familiarity with these mammals and the fact that their relative attitudes are calculated to make the groups self-explanatory seems to satisfy a large number of people, whereas the other exhibits mentioned are less generally familiar and are but slightly self-explanatory; so that, in order to make anything of them, the visitors are forced to consult the labels.

My group label for the pearl exhibit is, I believe, our record for length, containing six hundred words, and yet hundreds of people have been seen to pore over it, apparently reading every word, as though it were a matter of great interest to them; and only the other day I noticed a visitor with paper and pencil apparently making a full transcript of it.

The labels for the better-known exhibits, such as the groups of mammals before mentioned, are read by a sufficient number of people to make their preparation well worth the while.

In the composition of labels I have laid down the rule that the writer should approach the work, as far as possible, mentally transposing himself into the position of the ordinary visitor to a museum, determining what questions would probably arise in his mind and that he should then proceed to answer these in as clear a manner as possible.

It is not necessarily essential that the label should stop at this, it may be and very often is advisable to tell some things that the visitor would not know enough to ask; but I feel that the answering of his probable questions is of prime importance, because without this he will not be induced to acquire the habit of reading labels.

From a scientific standpoint it is of very little importance whether our mastodon skeleton is 7 feet 8 inches or 8 feet 7 inches in height, but, if the visitor finds the answer to his natural query respecting this detail answered on the label he will then take a moderate dose on the phylogeny of the proboscidians with better grace.

For many years I have clung to the heterodox view that, if one thoroughly understands a subject, he can explain it to a non-professional person of average education without the use of technical terminology; and, so far as practical, I blue-pencil unexplained technical terms on labels, except where they are used in repetition after the explanation has been given.

The general make-up of labels, the kind and color of paper, size, style, and fullness of face of type, quality of ink, and perfection of impression are details that go far in determining whether or not our visitors will read museum labels. The typewriter is an abomination for this purpose, greatly inferior even to a well-done hand-printed label executed with a pen. The labels should, if possible, be printed at the museum, as better results will probably be obtained than if given out as job work, and it is vastly more convenient.

My experience tends to the belief that the public will submit to a considerable amount of instruction, provided it is given in an unobtrusive manner, and that labelling may go a long way towards popularizing a museum.

The Chair.—" We are certainly indebted to Mr. Ward for his excellent paper, which is now before you for discussion.

Dr. W. J. Holland.—" In welcoming you this morning on behalf of the Trustees of the Institute I begged you not to accept what you may see in the Museum as representing our ideals. Our work here is in its infancy. This is particularly true in reference to the labelling of the collections, even those which are on exhibition. I hold in my hand a proof which I received from our printer this morning. This is the third proof of this label which the printer has sent me. These three proofs illustrate the difficulty that is often encountered in selecting type. All of the labels submitted to me have been neat, but testing them by the eyes of friends and acquaintances I have found out that the first two proofs submitted to me could not be easily read. A label is of no use unless it can be read easily. I dislike to see persons studying the collections of a museum uneasily adjusting their glasses and pressing their faces against the cases in order to see. In this particular case the label must be read by the observer standing at a distance of four or five feet from the object. I do not know whether I have selected the right type as yet. I found that a label 3 inches long by 2 inches wide was utterly useless. The label I hold in my hand is 6 inches long and 3 inches wide, and the type has been greatly increased in size. The selection of type, in view of the varying distances at which labels must be read, has frequently occasioned me a great deal of trouble."

E. S. Morse.—"The Association could employ all of its time in the discussion of this question.

"I am resolving that kind of a question now, and have come to the conclusion that labels should vary in size according to the size of the groups represented. There should be family labels, generic labels, specific labels, and, if possible, the name of the family and the genus should not be represented again and again. A large case containing a large group should have a large group label, which could be read a mile away. I am at present engaged in labelling a collection which was presented to us in exchange by an educational museum at Tokyo. Where the majority of the specimens in a large group are given by one donor let the chief label of the group give the name of the donor; do not repeat it upon every object in the group.

"It seems to me it might be a good thing if we could decide upon a standard label to be used, just as the cards published by the Congressional Library for the publications of the United States Government are used. The Library Bureau supplies libraries throughout the world with cards of the same size. In the same way if we could unite on a definite size of label and style of type, labels suitable to be used in any of the museums might be printed at one central bureau and supplied as they are called for."

F. A. Lucas.—"The Manchester Museum has attempted to do just that which Professor Morse speaks of. Mr. Bather relates the following incident in regard to one of the labels of the Manchester Museum. The label was as follows:

"THE LION

A DIGITIGRADE CARNIVOROUS MAMMAL
BELONGING TO THE FAMILY FELIDAE.

"A man seeing the label asked for an explanation, and was told that the label meant that the lion is a big cat which walks on the tips of its toes and eats flesh. The man replied: 'Then it appears that the lion is a big kind of cat. Why in thunder didn't the man who wrote that label say so?'

"The National Museum took up this question of labels at one time. A certain size was adopted for each style of labels. The labels were to grade down exactly as Professor Morse explains. The only trouble was that the scheme didn't work; and I do not think there are a hundred labels on the specimens in the National Museum which were there twenty-five years ago. There are times when you wish to put a big label on a small specimen, or a small label on a large specimen.

"You cannot make the explanations which you give on the labels too simple. A friend of mine says that the average run of visitors to natural history museums are little better than children, and content themselves with asking very simple questions. I think it was Professor Scott of Princeton who said that the duty of a librarian in preparing a catalogue was to bear in mind that he was making a catalogue for fools. Those in charge of the labelling of a museum should insist upon making the labels simple, so that they may be readily understood.

"I discover that in Brooklyn the public is very much given to the reading of labels, more so perhaps than in any other community in which I have been; certainly much more so than is the case in Washington. Perhaps this may be due to the fact that we have fewer specimens and fewer labels to read in Brooklyn.

"I do not believe in a central bureau which would undertake to provide a standard label to be used in the various museums of the country. I do not believe that that scheme would prove practical. While our wants in a general way are alike in all museums, our collections vary immensely in their origin and content. No central bureau could provide the museum of the Brooklyn Institute the labels which we require, and I do not think that any central bureau could provide the labels, for instance, which would be required here in the Carnegie Museum. There would be a very limited use for such labels.

" As regards type, I have found that the 14 DeVinne is a good size.

" Museum officers should not always be blamed for failure in making themselves understood; they are not always responsible; some of the blame rests at the door of careless observers. I remember at the United States National Museum that we put up the skeleton of a whale which hangs from the ceiling. In order that the labels might be read easily we made them three feet long and two and a half feet deep. Dr. Billings said to me: ' Lucas, why don't you put up labels six feet long? ' I acted upon the hint, and while I was at work putting the labels in position a man came into the hall and looking up asked: ' What are those big things up there and what are they for? '

" The three things, it seems to me, in writing a label are, first, to state what the object is; secondly, where it came from; and, thirdly, what is the special interest or significance attaching to it. Those are the three questions which people are apt to ask themselves. If you will state these three things upon your label I agree with Mr. Ward that you will get people to read your labels. Dr. Billings once said to me: ' If you think people do not read labels put something on the label that you do not wish them to know, and you will presently find out that the label has been read.' If you make a mistake in a label, even in punctuation, it will not escape ultimate observation.

" I think labels should not be too technical. We are remedying that. There is no country perhaps where more thought is given to the matter of the preparation of labels than America. It is worth noting that as a rule labels are not easy to write, and there are specimens in our own museum in Brooklyn the labels upon which I do not approve of, but which I have given up attempting to improve because I am in despair about the matter."

J. E. Talmage.—" There are a great many small museums in this country which cannot afford to provide labels which are costly and elaborate, and certainly cannot afford to print their labels. Such museums may have their labels prepared in a good style of handwriting or hand-printing. In the Natural History Museum, at South Kensington, in the department of minerals, the plan suggested by Dr.

Morse has been carried out. A large label covering a group is printed in plain, fairly large type on cards or stiff paper; then smaller labels are printed for the individual, ordinarily small, specimens. When these labels have been set up they are reproduced in book form. The type is not too large to be used on the page of an ordinary book. The visitor need not stop when consulting a collection to transcribe the labels, for he can get for six pence a copy of the pamphlet in which these labels are printed in book form, upon the margin of which he can make any annotations which he may desire to make. In many smaller museums it would be impossible to print a catalogue of a collection in this way, but even in small museums I think there might be a sufficient sale of such a pamphlet list of labels to pay for the cost of publication."

Benjamin Ives Gilman.—" A learned Japanese friend who was our adviser, when we were installing our archaeological collections from Japan, suggested to us that we should have no labels, but should instead print a catalogue in pamphlet form. We followed the hint, and, instead of formally labelling the collections, we have employed a printed sheet, which the visitor can retain as his own and make notes upon it. We feel that through the use of leaflets, where such a device is possible, we can get away from a great deal of the trouble, which arises in connection with the question of labelling collections."

J. E. Talmage.—" I would like to make a suggestion. When the American Library Association meets, the Library Bureau makes it a point to put upon exhibition all the latest devices employed in libraries, so that everyone who attends the convention is quite sure to see these things. The question of labels which we are discussing is one of very great importance. Might I not suggest that at the next meeting of our Association the different museums arrange to present a set of labels which they employ. An exhibition of labels, it seems to me, might be interesting, and we might be able to pick out those which in our judgment are the best. I think such an exhibit would add to the interest and value of our next meeting."

Benjamin Ives Gilman.—" Labels as ordinarily used do more to interfere with the artistic effect of exhibitions than anything else. In the case of a collection of beautiful medals in our museum in Boston I undertook to put numbers in the case with the medals. The beautiful effect of the medals was in part destroyed by the numbers.

The exhibit had a 'spotted' appearance. I then decided to arrange the medals in rows, and at the side of the exhibit to place a long label, which referred to the medals as the first or second medal to the right in a certain row, etc. In this way I removed the label wholly to one side and secured a better effect from an artistic standpoint. It seems to me that the labelling of collections calls for the exercise of intelligence and artistic instincts on the part of the curator in each individual case. It is impossible to prepare a uniform style of label which shall be used throughout the whole of a great museum. The first requirement in the label is legibility; in the second place the label should be subordinate to the object with which it is connected; it should not obtrude itself as of more importance than the thing labelled. In cases where we have great flamboyant gilded labels attached to the frame of a picture the labels detract from the effect of the exhibition. In the National Gallery in London they employ a single strip, which is attached to the frame, giving the name of the donor, and below the name of the artist. The device is simple and capable of being carried out in uniformity, but nevertheless is objectionable, because it introduces a disturbing element."

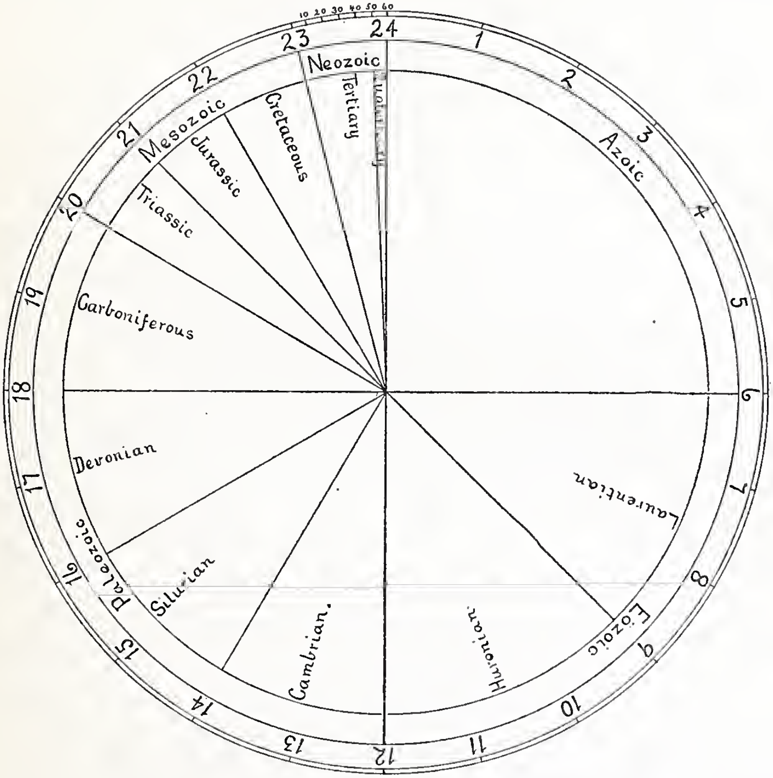
F. C. Baker.—"I represent one of the smaller museums. It has been said that they cannot afford to print their labels. I venture to differ. We have been printing our own labels for seven years. We have our own printing press. A small printing press can be obtained for fifteen dollars. It is not difficult to employ some one, who may perhaps perform other duties, who is able to devote a good deal of time to the composition of labels, which are then printed upon a little hand-press. Labels should be printed upon tinted paper in harmony with their surroundings. They should never be printed upon clear white. A museum should be thoroughly labelled."

Dr. H. C. Bumpus.—"In discussing the interesting question before us it seems to me that we are discussing a number of different things, because labels have to perform different functions. I have had a feeling for some time that the desire of the visitor might be ascertained. Those connected with natural history museums should visit art collections, presuming them not to be connoisseurs in matters of art, and, on the other hand, those who are connected with art museums might do well to visit natural history museums, and sufficiently well informed to differentiate between a museum of fossil plants and an art gallery are probably very few in number and need not be considered in any scheme of museum economy. Nevertheless, experience has demonstrated that certain factors in connection with fossils in general require careful consideration in regard to explanatory labeling if any display of such objects is to have its proper educational value, even to the person of average information and intelligence. It is not safe to assume the possession, by the general public, of even the most elementary knowledge relating to natural objects.

For example, an astonishingly large number of persons are evidently puzzled over the problem of how a fossil, especially such a fragile object as a leaf or flower, could have become imbedded in solid rock or left its imprint in such hard material. To such persons, of course, some information in regard to the origin of sedimentary rocks is necessary, and some explanation of the difference in origin between sedimentary and igneous rocks, in order that they may not expect to find fossil remains in a trap dyke as well as in the sandstone associated with it, as some occasionally do in connection with the rock of the Hudson River Palisades. How best to impart this information by means of an explanatory chart is something that I have been seriously considering.

Probably the one question which is most frequently asked in regard to a fossil is how old it is, or how long ago in the world's history was the geologic period in which it lived. Disappointment is usually expressed because definite figures in years can not be given. The age of the world, the extent of geologic time, and the slowness of geologic processes, are matters in regard to which most persons apparently have no conception, and a majority are frankly incredulous when tens or hundreds of thousands of years are mentioned in connection with the relatively recent remains of the Quaternary Period, and indefinite millions of years in connection with those which preceded it.

It has occurred to me that possibly a chart, giving the calculations which have been made of time ratios in connection with the primary geologic time divisions, might be utilized in order to convey some idea of this factor, in preference to any attempt to indicate definite figures for the probable antiquity of the several geologic periods. With this idea in view, I have prepared the following chart, adapted from a similar one by Dr. Lester F. Ward:



This chart is based upon (1), an assumed age for the earth of 72,000,000 years, which is a fair average of the numerous estimates which have been made by geologists and physicists in this connection, and (2), the ratios between the several geologic time divisions as estimated by eminent geological authorities.

The clock dial, representing the cosmic day, is divided into twenty-four hours, hence each hour is equivalent to 3,000,000 years of geologic time.

The estimates of the geologic time division ratios are:

Pre-Paleozoic (Azoic and Eozoic) Time	12
Paleozoic Time	8
Mesozoic Time	3
Neozoic Time	1

SOME INSTRUCTIVE METHODS OF BIRD INSTALLATION

The nineteenth century has witnessed many sweeping changes in science, art, mechanics, and in fact in all departments of human industry. In none of these subjects have the changes been more radical than in our public museums. Doubtless the minds of all present run back to the time when our museum collections consisted of case after case of families, genera, and species arranged in strict order of classification, but without a single label to tell the lay visitor anything of the habits, geographical distribution, or economic value of the objects exhibited. The speaker well remembers a certain museum in which were exhibited 25,000 mounted birds, so crowded in the dimly-lighted cases that it was difficult to distinguish one bird from another, and with no labelling save a written tag telling the scientific and the common names, where shot, and by whom presented. This condition prevailed fifteen or twenty years ago in all of our museums and may still be seen in not a few museums of note.

Dr. Bumpus has recently[1] expressed the opinion that the unsatisfactory condition of many museum exhibits has been due to the desire of the curator to secure adequate storage room for his specimens and with this opinion we must all agree. From this attempt to store the material in a systematic and accessible manner has arisen the present unsatisfactory condition of many, if not most, bird collections. It is needless to add that a collection arranged with the storage idea in view has little or no value as an educational exhibit and in many cases degenerates into a jumble of birds. If, as Dr. Bumpus has pointed out, we arrange and install our collections with a view to the inculcation of ideas, then each exhibit will be prepared to call the visitor's attention to some one of the interesting or instructive features of the object shown.

The speaker desires in this paper to present a few examples of what a museum of moderate means and attainments may do in building up an educational collection of North American birds. Of the two hundred and fifty or more museums in the United States, but a very small percentage have made any attempt to arrange their bird collections in such a manner as to instruct the public.

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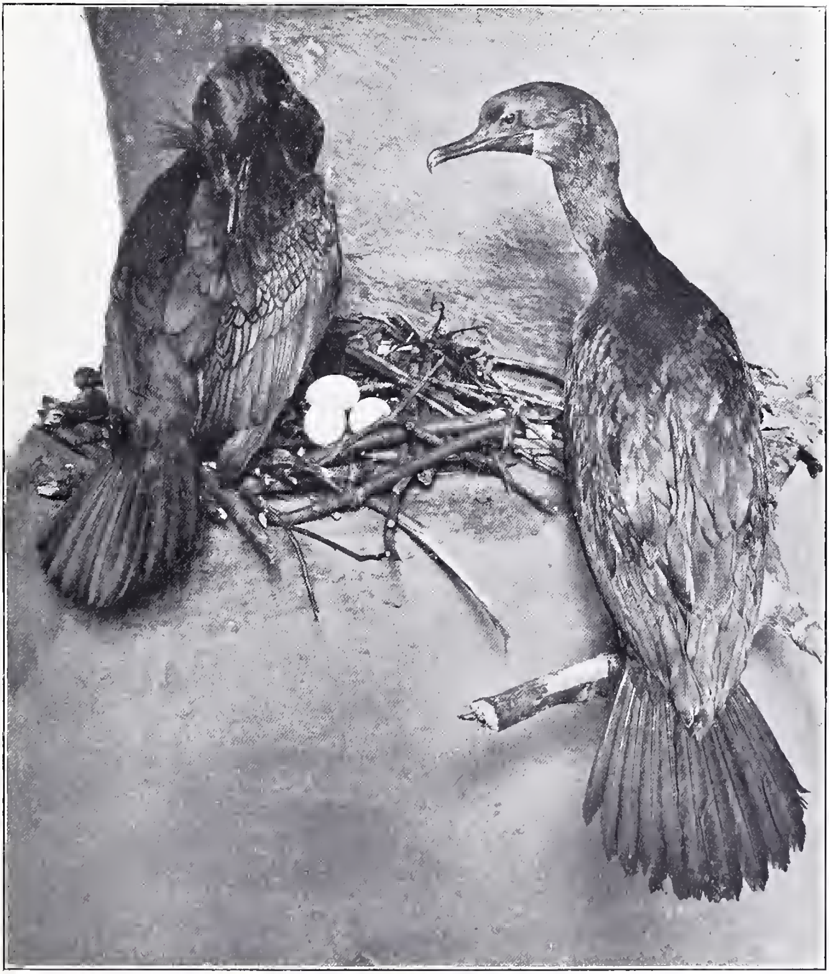
[1] *The Museums Journal,* VI, No. 9, p. 297, March, 1907.



GROUP OF CORMORANTS MOUNTED IN ONE OF THE CASES OF THE CHICAGO ACADEMY OF SCIENCES

Among the larger museums that have adopted the educational methods of installation may be mentioned the American Museum of Natural History, the National Museum, the Brooklyn Institute of Arts and Sciences, the Field Museum of Natural History, in Chicago, and the Carnegie Museum of Pittsburgh. The Boston Society of Natural History and the Milwaukee Public Museum, as well as some others, are also producing commendable results along this line.

Before presenting in detail the methods used in the ornithological collection of the Chicago Academy of Sciences, it may be well to consider briefly the nature of our museums and the character of their visitors. Broadly speaking, museums may be divided into three types: (1) Those belonging to colleges, universities, and other schools; (2) those belonging to learned societies or to other private bodies; and (3) those which are designated as public museums and which are wholly or in part supported by public funds. The collections should be arranged to suit the character of the institution. Thus, a college or university museum collection would require a somewhat different treatment from that in a public museum, as it would be used by an entirely different class of people. It is with the public museum that the present communication deals.

I have elsewhere said, following Mr. F. A. Bather of the British Museum, that the visitors to a public museum may be divided into three classes: (1) Investigators, (2) students from schools or colleges and amateur collectors, (3) the lay public. Mr. Bather has justly urged that the larger museums should divide their collections into three parts, corresponding to these three classes of visitors. It has seemed to me that these various classes could be grouped under two heads: (1) The technical investigator, including the university student, and (2) the lay public, including the amateur collector and the pupil from the public school.

From this point of view the collections should be separated into two classes: (1) Those which are exhibited, to be arranged for the lay public, and (2) those which are stored and form the study series, to be installed in such a manner as to be easy of access only to the special student or scientific investigator. The second class would consist of the large mass of the collections arranged taxonomically; the first class would consist of groups and specially selected synoptic and biologic series. In this class the enthusiastic museum curator finds a vast field for his labors, the subjects, from which to select interesting and educational exhibits, being endless. Here the great truths of nature may be graphically told, and presentation may be made of such subjects as the adaptation of the organism to its environment in the way of organs of locomotion, of prehension, or of perception; also of offense and of defense; mimicry; protective adaptation either of form or color; the correlation of the feet and bills of birds in relation to their food; correlation of sex and age; molting; migration, and a hundred other topics of equal value and interest. The same may be done with groups representing evolution, geographic variation, and injurious and beneficial birds and insects. As I have already intimated, the modern museum is waking up, and the museum of the future will not only contain adequate exhibits of the subjects outlined above, but also many others of value to the public.

In the short time at my disposal I desire to review briefly a few examples of the educational methods of installation which have been attempted by the Chicago Academy of Sciences in the ornithological exhibits. These are illustrated by a number of photographs.

A word concerning cases may not be considered out of place. Much discussion has been heard of late in regard to iron *versus* wooden cases. Personally, we prefer the wooden case, and we fail to see where the iron case, except in its fire-proof quality, has any advantage over the wooden case, which is handsome and permits of variations of installation at little expense, not possible with the iron case. As to color, the writer prefers mahogany and next to this a very dark-finished oak, which is the finish used for the cases of the Chicago Academy of Sciences. For the interior of the bird cases, a soft bluish-gray has been selected, similar to that used in the mammal cases of the American Museum of Natural History. This has seemed to us to be the best possible background for birds, and it fades very little.

The subject of shelving has been definitely settled by the adoption of plate-glass shelves, with which a number of the bird cases are now equipped. Glass shelves allow the uniform diffusion of light throughout the case, besides being inconspicuous and attractive. These shelves are supported on brass rods, which extend from the door-posts to the back of the case. The main idea in the installation of the bird exhibit has been to make the case furniture as inconspicuous as possible. The attempt has been made, and we believe successfully, to bring the top shelf within a reasonable distance of the eyes of a visitor of ordinary height, and this shelf is placed five and one half feet above the floor. It is painful to see the unsuccessful efforts of visitors to some of our museums, as they endeavor to read a label printed in small type and placed seven or eight feet above the floor.

Some radical changes are being made in the ornithological exhibit of the Chicago Academy of Sciences. The exhibit consists of a representative collection of North American birds, intended to exemplify the nesting habits and environments, the geographical ranges at different seasons, and the sexual differences in coloration during the nesting season. All species are mounted in pairs, in the spring plumage, on natural branches. Wherever possible, Illinois species are shown with nest and eggs, or nest and young, with enough of the environment to bring out clearly the typical home of the bird.

The group idea contains the highest type of museum installation, for by means of it we are able to present not only the organism but also its environment to the notice of the visitor, who would in most instances be otherwise able to form but a vague conception of the homes of nature's children. What museum man has not been thrilled while viewing the magnificent groups in the American Museum of Natural History or in the Field Museum of Natural History. The elaborate and costly work in these institutions is, however, entirely beyond the reach of the majority of museums. But the idea may be used by all and it is the group idea which is after all of the most importance and not the elaboration of the productions. The museum of limited means may produce many useful groups at small expense. In the bird collection of the institution under discussion the group idea is being carried out to a large extent and we hope in the near future to be able to exhibit a notable proportion of the birds of North America with their nest, eggs, and young.

An innovation in this connection is a map of North America and a portion of South America showing the distribution of the species at different seasons by means of different colors on the map. Thus, the breeding range is green, the winter range red, and the migration range yellow. A map of this kind is exhibited with each species. Several supplementary maps are placed in every other case, explaining the method of plotting the different areas of distribution and also showing routes of migration.

As an introduction to the general bird exhibit, a case of avian morphology has been prepared, calling specific attention to some of the more obvious forms and structures of different groups of birds. Some of the topics are: Types of bills; of tarsi; of feet; of wings; of tails; the structure and color patterns of feathers; colors of birds in relation to sex and in relation to season; molting and plumage cycles; size, color and form of eggs; variation in the number of eggs in a set, etc. This introductory collection will also include such topics as: Correlation of bills and feet in relation to food and to environment; form and modification of the skeleton; embryology, genealogy, and other features of this character.

The installation of this morphological series is possibly somewhat unique. The specimens illustrating each topic are placed on a large panel, 17 x 24 inches in size, made of No. 15 binder's board. This is covered with dead-black paper, which provides an effective background. These panels are of a uniform size and are interchangeable, allowing variations in the installation to be made at any time. Each panel is provided with descriptive labels, which sufficiently explain the idea to be emphasized.

In connection with the bird exhibit we desire to urge the value of local collections, which are too often entirely neglected and thought to be too insignificant for serious consideration. Each museum should aim to have the most complete and exhaustive collections of the local fauna and flora. The Chicago Academy of Sciences has built up several exhaustive collections of mollusks, insects, minerals, fossils, birds, and plants, illustrating the fauna and flora of Chicago and vicinity. Every species found in this area is exhibited and a large study series supplements the exhibit series. There is no reason why the smallest and poorest museum should not make very valuable local collections.

Before drawing this paper to a close we desire to say a word concerning descriptive labels. The speaker is an advocate of descriptive labels and plenty of them. There is danger, however, of overdoing the matter in providing heavy, verbose reading matter. A large number of short, terse labels, telling in few words some interesting fact, is better than a few very long ones. Descriptive labels should also be confined, in most cases, to a plain statement of fact, leaving the theories to the text-books, to which attention should always be drawn.

That descriptive labels are read by a large proportion of the visitors to a museum has been proved to the speaker beyond a question. Many times he has seen visitors not only reading and comparing the labels with the specimens, but also copying the information in a notebook. The public is also quick to perceive the change from the old to the new educational method, and many people, business men particularly, have taken the trouble to call at the office and commend the museum for the betterment of its collections. There are some people, of course, who would not read a label if the letters were a foot high, but this class of visitors is fortunately small, and not to be considered in the matter.

In closing this paper we desire to emphasize the fact that the old ideas of taxonomic exhibition must be eventually discarded and their places taken by the new educational and instructive methods which seek to make each individual exhibit tell some phase of nature's story, and in the course of time our museums will become veritable storehouses of pleasurable instruction, and will be eagerly visited by all classes of people.

Mr. P. M. Rea.—"The Charleston Museum carries on popular bird work through the medium of a natural history society and supplements a seasonal exhibit of local birds by offering a guide to accompany field parties of from two to five members of the society and to assist in identifying the birds seen. It is recommended that parties assemble at the museum whenever possible and return from the field to the museum for a close examination of the species that have been observed in the open. I am very much interested in Mr. Baker's suggestion of making small groups to show the habits of the birds."

E. S. Morse.—"I desire to heartily concur in what Mr. Baker has said in the matter of labels. I agree with him that short labels printed in big letters, so that the student may at a glance know the name of the object that he is looking at and ascertain the essential facts which he wishes to know, are the best. The scientific name and the vulgar name should be given, with locality, followed by a comparatively brief paragraph of description, with reference possibly to some authority where fuller information may be obtained."

The Chair.—" Our experience at the American Museum of Natural History has been that the installation of small groups is not only of great educational value, but is in reality less expensive than the earlier methods of installation. I refer particularly to the groups which we have been recently installing with painted backgrounds and in which artistic accessories are used pretty freely. Groups of this sort must have a background painted by one who is more than a museum artist; good work is needed on the background. The accessories need not be very expensive, and the cost of the case is not considerable. By using the method we have resortd to we do away with mahogany frames and a lot of plate glass, and the bird groups, while giving the appearance of having cost a great deal of money, nevertheless in fact represent an economy in construction. An ordinary plate glass case framed in mahogany, which would occupy as large a space as the groups to which I refer, would cost in New York about five hundred dollars. A good background can be painted by an artist of skill for from two hundred to three hundred dollars. There is left then about two hundred dollars for the mounting of the birds and providing the necessary accessories. As an actual fact less than two hundred dollars has been required to build the groups, providing everything, after the services of the artist have been taken into account."

P. M. Rea.—" I would like to inquire how a small museum which is unable to regularly employ taxidermists may secure various groups of birds and mammals. Would it be possible to secure the services of a competent man, not permanently engaged on the staff of one of our museums, to undertake work of this sort occasionally, as it may be called for?"

The Chair.—" Answering Mr. Rea's question, I think it is quite possible. One of the best taxidermists in America (I think Mr. Akeley will bear me out in saying so), is available at any time for such work. I refer to Mr. Denslow, who is not connected with any institution and is willing to undertake commissions. There are several men who are doing creditable work upon mammals who can be engaged at any time. In the matter of accessories, I know that there are one or two persons who are capable of doing excellent work whose services may be secured."

At this point the Chair announced that an invitation from the Art Institute of Chicago to meet in Chicago one year hence had been received, and he requested any others who might desire to present communications in reference to the matter to present them now, in order that they might be read by the Secretary and perhaps referred to the Council with instructions to bring them before the Association prior to adjournment. The invitation from the Art Institute of Chicago, which was read by the Secretary, is as follows:

"I write on behalf of the Trustees of the Art Institute of Chicago to invite the American Association of Museums to hold its meeting in 1908 in Chicago at the Art Institute. We would be honored by the acceptance of this invitation, and will do all that we can to promote the entertainment of the members.

"W. M. R. French, *Director.*

Mr. W. M. R. French.—"May I say a word of explanation? I hardly expected that this matter would be brought before the Association at this moment. I know that if the Association should decide to come to Chicago the Field Museum of Natural History, of which Mr. Skiff is the director, would certainly insist upon taking part in showing hospitality to the Association. Mr. Skiff intimated as much to me by telephone a day or two ago, and also intimated that he thought it was settled that the Association would come to Chicago in 1908. I hope that it will, and for the Art Institute I will say, that, if the honor of entertaining the Association is divided between us and the Field Museum, we will do well with our half."

F. C. Baker.—"If the Association decides to come to Chicago I wish to say that the Chicago Academy of Sciences will also wish to have its part in entertaining the body. I would like to suggest, in referring to the remarks of the last speaker, that the Art Institute and the Field Museum will not have the privilege of the "halves," but simply of the *thirds*. The Chicago Academy of Sciences will have to have its share in the matter of entertaining the Association."

The Chair.—"You have heard the invitation presented by Mr. French. The matter will remain in the hands of the Council and will be brought forward again for formal action by the Association."

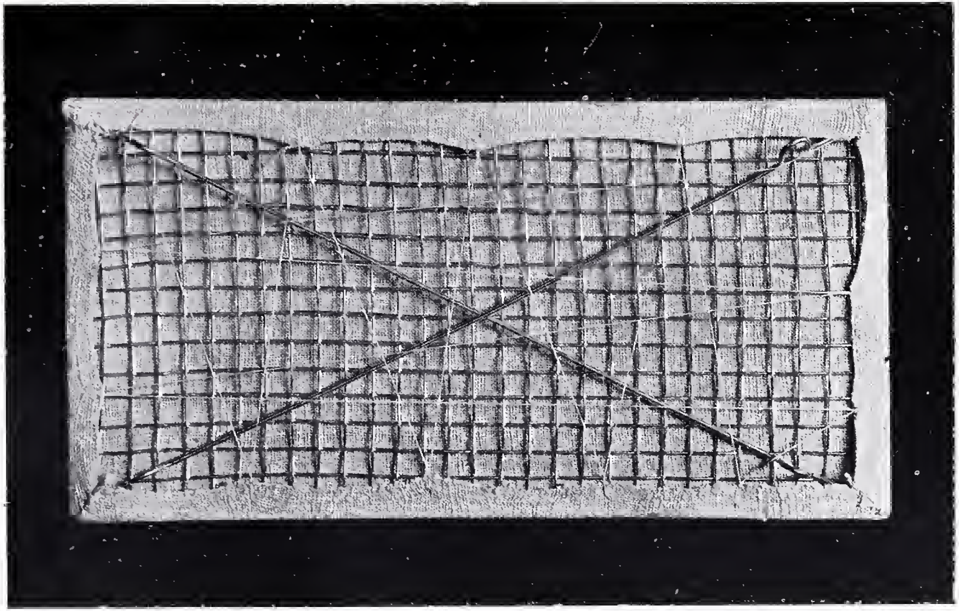
The reading of papers was resumed.

Dr. E. S. Morse, director of the Peabody Academy of Science, read a paper upon "A New Method of Mounting Ethnological Objects," illustrating the same by examples of the mounting devices employed by him.

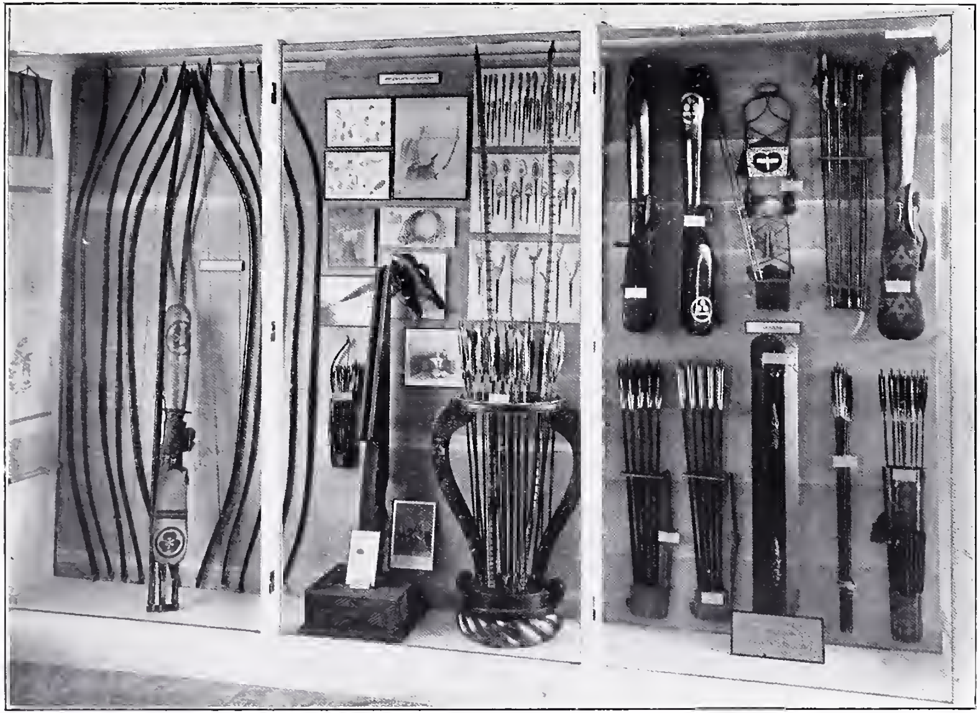
A NEW METHOD OF MOUNTING ETHNOLOGICAL OBJECTS

It may be rash for me to entitle my communication a new method of mounting objects for museum display, as doubtless the idea has occurred to others, though I have never seen it put in practice. When I took charge of the Peabody Museum, in Salem, all the specimens were arranged on horizontal shelves, as in so many other museums. While this would do for stuffed birds, mammals, etc., standing in single rows, or alcoholic specimens in jars, it certainly would not do for small objects, particularly if they were lying in trays, or if there were a number of rows, one behind the other. I began with the corals, wiring them on wooden tablets and hanging these to a larger tablet, two of which filled a vertical case. These were inclined to the wall or stood vertical as desired. In arranging the ethnological collections the objects were placed in their proper position on the large case-tablet and then secured by wiring, or simply hung on tacks driven into the tablet. In many ways this was unsatisfactory, though in every instance the object was fully displayed. In rearranging the oriental collections in a new exhibition hall recently given by Dr. Charles G. Weld, the idea occurred to me to use square sheets of coarse wire netting covered with Russia linen upon which the objects of a group, like combs, necklaces, sword-guards, etc., might be sewed. A friend suggested the wire cake cooler as an improvement and it proved to be so, for an experiment with a few of these answered every purpose. I then drew the dimensions of various sizes and had several hundred made. Two brads driven into the wooden tablet enables one to hang the wire tablet upon them in any position, that is, higher or lower, to the right or left, within certain limits.

The linen covers the front of the tablet and is turned over on the edges, the coarse wire netting being exposed on the back, the meshes permitting it to be hung on these brads or wire nails above mentioned. In sewing on the linen the threads go across the tablet on the back, and original labels, letters, or memoranda can be slipped in behind the threads. One generic label is sufficient for each tablet, and minor labels are fastened near each object as desired. Anyone wishing to examine a group of objects simply removes the wire tablet from the big case-tablet. The two case-tablets may be



BACK OF WIRE CAKE-COOLER COVERED WITH RUSSIA LINEN USED BY PROF. E. S. MORSE
AS MOUNT FOR SMALL OBJECTS



CABINET SHOWING MANNER OF UTILIZING THE WIRE-CLOTH MOUNTS DEVISED
BY PROFESSOR EDWARD S. MORSE

joined by cleats behind so that the entire case shows one continuous tablet. By this arrangement all the objects are displayed on a vertical surface.

The swords and spears rest on wooden pegs which are driven into holes bored for the purpose and every object can be immediately removed from the cases. The cases stand at right angles to the walls, and on adjacent square pillars which support the gallery an oak tablet is affixed upon which is painted in large black letters the general contents of the cases, such as musical instruments, clothing, weapons, toys and games, etc. This label satisfies possibly ninety out of a hundred casual visitors. A smaller group label neatly glazed and bordered with black—a passe partout, in fact—indicates the general contents of each wooden tablet, such as lamps and candlesticks, food vessels, tea utensils, etc. These are printed in large square type on manila paper and are very distinct. These labels satisfy most of the remaining hundred. In still smaller full-faced type, on paper the color of the cloth-covered wire tablets, a generic label is affixed, such as shoes, sword-guards, dolls, etc. The specific labels are written on small manila cards for the individual objects on the wire tablet.

It has been the testimony of hundreds of visitors that the collections are examined with the least possible fatigue. That is all.

The Chair.—" I hope I may be pardoned if I make one or two remarks of a personal character. Do you realize, ladies and gentlemen, that Professor Morse is at the head of the oldest museum in this country at the present time, and that he has been actively, industriously, efficiently, and successfully busy with the work of museums for a larger number of years than any other person present? Nevertheless at all of these meetings he is the youngest man on hand and has the most ideas to present. He concluded his remarks by saying ' That is all '; we know better than that. He has submitted a great many suggestions already, and will submit many more which will prove that what he has said is not all."

Mr. P. M. Rea.—" My interest is aroused by the statement which has just been made by the Chair, that Dr. Morse represents the oldest museum in this country. I am inclined to question whether that statement is absolutely correct. In going over the records of the Charleston Museum I find that it traces its beginnings back to the later years of the eighteenth century. Last spring I discovered a list of specimens presented to the Charleston Museum between the years 1798 and 1808, many of which things are still in our possession. If I am not mistaken this antedates by one year the museum at Salem, which was founded, I believe, in 1799."

E. S. Morse.—" I would like to inquire whether this museum is open to the public, whether it has been since its beginning a public museum? "

P. M. Rea.—" It has not been through its entire history open at all times to the general public. Few institutions in the South were thus open in the earlier days. The museum was started under the auspices of the Charleston Library, and was then transferred to the Library and Philosophical Society. It was on the same footing as the library, and was maintained by subscription, including among those who were its supporters many of the best and most prominent men of the city of Charleston. Anyone who desired to do so could get admission to the museum. We have objects at present in our possession which were placed in our custody as far back as 1798. For the last twenty-five years the museum has been open on Saturdays, at least, free to the public."

E. S. Morse.—" I am delighted to hear what I have heard in reference to the Charleston Museum. It is a matter of interest to me to know that apparently this institution has slightly anticipated in its activities the institution which I have the honor to represent."

A paper upon " The Advantages of Installation in Swinging Frames " was read by Director W. M. R. French, Director of the Art Institute of Chicago, who presented a number of photographs in illustration of the paper.

INSTALLATION IN SWINGING FRAMES

My attention has been called anew to the advantages of swinging frames for museum installation by a recent experience with a collection of laces. The Art Institute of Chicago, as is well known, is in the very heart of a great soft-coal-burning city. Every object left exposed is soon covered with a deposit of the products of combustion. Ordinary show-cases delay, but do not prevent the process. In our ordinary exhibition cases such delicate fabrics as white laces become intolerably soiled and dingy in two or three years. It happened that thirteen or fourteen years ago we placed a small collection of laces in close swinging frames, in which they have been on continuous exhibition ever since; and to our surprise they are still entirely clean, apparently as white as when they were put in. This has been a kind of test case, and has led to the installation of our whole collection of laces and small fabrics in this manner. An extraordinary feature of the case is that no great precautions have been taken to make the frames air-proof or dust-proof, although it would be easy to do so.

Our frames are simple, strong, ebonized frames, with glasses facing both ways, between which are placed, back to back, the cardboards bearing the specimens. Glasses and specimens together are slipped in at the top, and the aperture of $\frac{5}{16}$ to $\frac{5}{8}$ of an inch, is closed by a tongued strip simply dropped in. The photographs sufficiently explain the construction. Apparently the specimens lie so close to the glass that no dust or deposit gets to them. It would be very easy to paste a strip of paper or cloth round the edges of the glasses before slipping them in, in passe-partout fashion, thus hermetically sealing them, but this we have not found it necessary to do. It would make rearrangement a little more difficult. These frames are provided each with two substantial hinges, screwed upon one edge of the frame, and are hung in straight rows from three to seven inches apart upon hard wood ebonized strips upon the walls. In some cases we hang them upon the wooden walls without strips. We use frames of various sizes, and in the case of the larger sizes, since the weight and strain are considerable, the wall-strips are fastened to the brick walls by split bolts. Such an installation of large frames could not be made upon a light wall. Of course the frames may be hung round a central column. We have one such construction, made in Paris, bearing six frames on each of eight sides, ninety-six glasses in all.

We have in use four sizes, viz: 28 x 22 in. (size of glass), for photographs, drawings, and small textiles; 24 x 18 in., for series of small drawings; 42 x 26 in., for larger textiles and laces; 34 x 30 in., for the Arundel prints (colored lithographs).

There is no reason why much larger sizes, at least in the vertical dimension, may not be used, although there would be more difficulty in putting the glasses in.

As to cost, I have a bid for the 28 x 22 inch size, with glasses, at present of about $6.00 a frame, to which must be added $1.50 for hinges—$7.50 in all. This is rather expensive for the amount of gallery space occupied, but not for the material provided for. The principal additional cost for larger sizes will be in the glass.

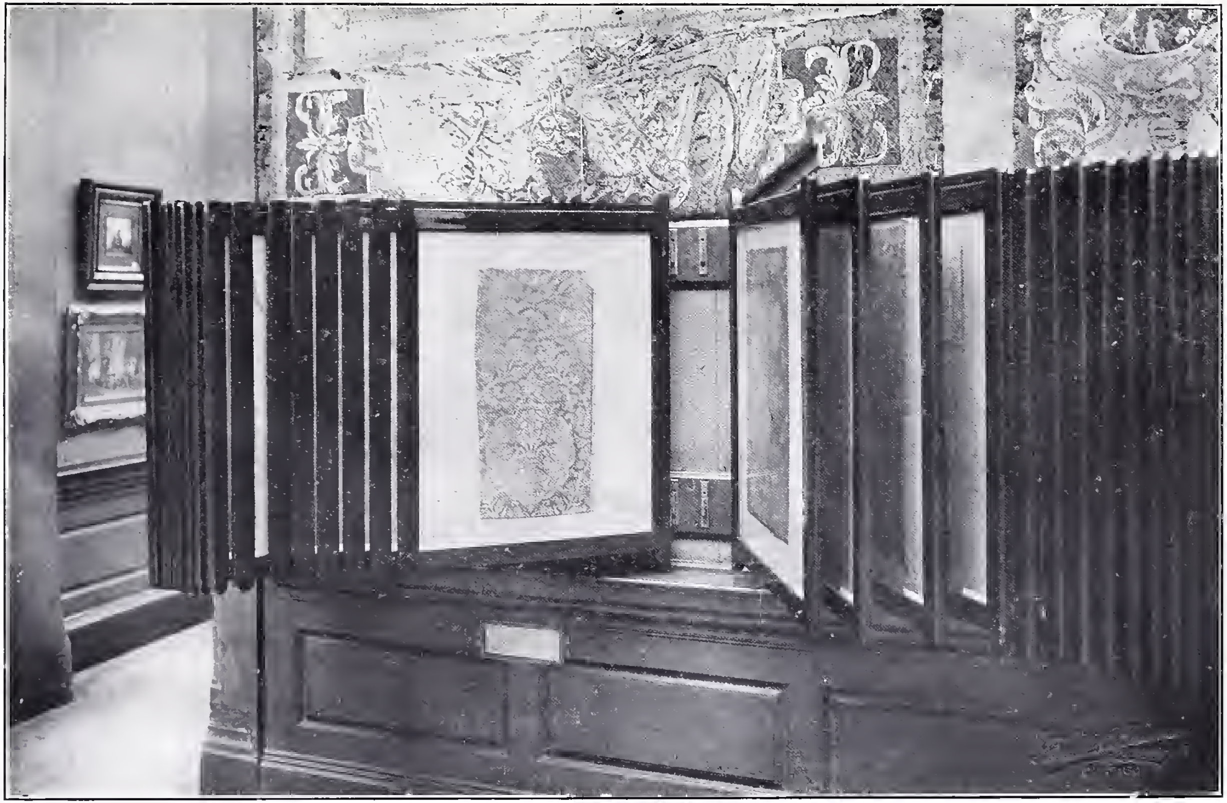
The advantages in this mode of installation, besides cleanness, of which I have already spoken, are compactness, ease of consultation, protection from light, and convenience of reclassification.

1. *Compactness.*—It is easy to see that the saving in space is immense as compared with upright cases upon the wall or in recesses. In point of fact, a collection that occupied a whole gallery with us is now compressed into a single wall of 15 or 20 feet long. It is easy to figure it. Suppose an exhibition room of 30 feet square, exclusive of doors. Small objects could scarcely be well seen below the picture line, nor more than 5 feet above it. 30 x 4 x 5 gives 600 square feet of exhibition space. Our larger frames are about 2 x 3½ feet, or 7 feet area—14 feet, counting both sides. 600 divided by 14 gives 43. 43 frames at 3 inches apart would occupy a linear wall space of 14 feet 4 inches, or less than ⅛ of the room. If it be said that objects could be exhibited much lower and higher than I assume, certainly the hanging space could not be more than doubled, and the exhibit would still be compressed into one fourth the space. The closer the frames are hung to each other the more they will project into the room when not in use. But frames 1⅛ inches thick and 30 inches wide placed at 3 inches from center to center, will not project more than 16 inches.

2. *Ease of Consultation.*—There is no method of exhibition so convenient or so attractive to visitors. People like to turn the frames, and the student can put the object into the best light for examination. It is easier to run through such a set of frames, and to find a given specimen, than it is to turn the pages of a large book.

3. The specimens are most of the time in shadow, that is, protected from strong light, because the frames lie together, and in the case of certain textiles and other objects this is an important recommendation.

4. *Convenience of Reclassification.*—It is obvious that such a series is almost as susceptible of rearrangement as a card catalogue. All you have to do is to lift the frames off their hinges, put them



SWINGING FRAMES AS UTILIZED AT THE ART INSTITUTE OF CHICAGO TO DISPLAY LACES, ETC.

in such order as you choose, and replace them. Transpositions and interpolations may be made at will. When the objects are once installed and labelled in this manner the curator's troubles are over. The collection is disposed of as a finality. This I think will meet the acceptance of our busy museum officials.

I will not go into the adaptability of this method of installation to various objects, but I think it is obvious that it may be extended with advantage to small specimens of many kinds, such as coins, scarabees, small reliefs, and no doubt to many natural history and botany specimens, though I have used it thus far only for coins.

Dr. W J McGee.—"There is one point in this connection which seems to me worthy of even greater emphasis than Mr. French has given to it, and one which is not always as carefully considered in connection with museum exhibits as it ought to be. I refer to the freedom from soiling of specimens which is secured by mounting them in swinging frames. This is due to the comparatively small amount of space included within the frames, coupled with the elasticity of material secured in this form of installation. It is important to recognize in all installations that a circulation necessarily must take place between the interior and exterior of our cases. Atmospheric pressure is varying constantly. If cases are made absolutely air-tight it is necessary that they should be strong enough to resist the variation and pressure from within and without, or be sufficiently elastic to permit of adjustment to the pressure. In these thin flat cases or wall frames the form is such that they are able to adjust themselves to varying air-pressures. The objects placed in them remain comparatively clean. The principle is one which is worthy of careful consideration in connection with museum cases in general."

Dr. W. J. Holland.—"We have employed the method of installation in swinging frames in our museum, and you will notice that in one of our halls there is an exhibit of sections of our native woods thus installed. We have in view the employment of this method for the installation of botanical specimens. An estimate has recently been handed in to me by the gentleman in charge of the section of botany in the museum in which he states that specimens of all the flowering plants which occur in this county, numbering nearly a thousand species, can be conveniently displayed with proper labels in four of these cases built of a sufficiently large size and provided with rotary leaves. While it may be objected that such pieces of furniture are large and occupy a considerable space, nevertheless I believe that a vast economy in installation is effected by their use in spite of their size.

"Touching upon the point mentioned by Dr. McGee, I desire to say that absolute immunity from the invasion of dust and soot can be obtained in the case of these flat mounts by the device known to dealers in pictures as passe-partout. I suppose you all understand what is meant by this. The objects to be exhibited are simply placed between the glasses which are to contain them, and then the glasses are bound on the edges by tape or paper, so that the contents are sealed between the glasses. The glasses are then put into frames. Communication with the small space between the glasses and the outside air is prevented in this way, and the amount of air included between the glasses is so small that varying atmospheric pressure does not lead to any inhalataion of dust or soot.

"Referring to the elasticity of materials and to cases of much larger size, I wish to say that in large constructions we are confronted with serious difficulties. On the third floor of this Museum you will see an old Egyptian boat placed in a case which is 38 feet long, 8 feet wide, and 7 feet high. This case is subject to very great changes due not merely to barometrical fluctuations but variations in temperature. Our aim was to make this case air-tight, so as to keep out the soot and dust of Pittsburgh, but had it been built absolutely air-tight when the summer season comes with its rise in temperature the case would undoubtedly burst. We have provided a very simple method of overcoming the difficulty. We have arranged for two openings into the case about an inch in diameter, communicating with the outside air through a long brass tube. This tube, which is concealed except at the point where it opens into the case and where it furnishes exit to the outer atmosphere, is filled with antiseptic cotton, not packed in tightly, but quite loosely, and at the point nearest to the inner opening slightly moistened with glycerine. The case breathes, so to speak, through these two openings. Particles of soot and dust as they are drawn in are caught in the cotton, which from time to time is withdrawn and burned and replaced by fresh material. I do not know that this device, which is the result in this particular case of my own planning is entirely new. I have a latent idea that somewhere or other in some museum, possibly on the other side of the Atlantic, I have seen something of this sort resorted to, but I really could not tell you where it is."

F. A. Lucas.—" I think the device to which our attention has been called is a case of 'parallel evolution.' The same sort of a device is used in England, Germany, and in some of our own institutions in America. In our own museum we have some large cases planned by the architects. In order to secure proper ventilation we were compelled to make holes in the bottom of the cases about a foot square which we have filled with cotton batting. I cannot conceive that for so large a case as that to which the doctor has called our attention a small tube would be sufficient. I should think about a foot square of ventilating surface should be provided in such a case.

" Recurring to the subject brought to our attention by Professor French, I wish to say that the method of installation in swinging frames is available for a very large class of objects. It is used in the Metropolitan Museum of Art for water-color paintings. I propose to use it in the Brooklyn Museum for every class of flat objects capable of thus being installed."

O. C. Farrington.—" The idea of filtering the air which necessarily passes in and out of cases has been used in Chicago for a number of years. The idea has been evolved independently. A number of museum men have developed it in various ways."

The Chair.—" Mr. Howe, of the New York Botanical Garden, is with us. May I ask him whether they have not used these cases at the New York Botanical Gardens? It seems to me that I have seen them there."

Mr. Howe.—" We are using them extensively."

The Chair.—" I should like personally to know if there is any manufacturer or dealer in swinging frames who makes a business of supplying them."

Mr. French.—" I do not know of any dealer who makes a business of supplying them. The first two that we put into use in Chicago were made by a firm in Paris and contained originally a collection of Braun's autotype prints. We bought them in 1890. We have since made our own. The French cases are of course quite expensive."

A Member.—" Could not such swinging frames be made of aluminium? That material would be lighter."

Dr. W. J. Holland.—"I fear that to have them made out of aluminium would involve mechanical difficulties. Aluminium does not lend itself well to the making of tight joints in frames except by riveting, and this might prove expensive. We have never experimented with aluminium in this connection, but I think wood is liable to prove after all the best material."

A paper was presented by Director Henry L. Ward of the Milwaukee Public Museum upon "The Exhibition of Large Groups in Museums." Mr. Ward prefaced the reading of his paper by remarking that it had been originally prepared to be read at the New York meeting, and stated that Mr. Akeley, who had had as extensive experience in this matter as any man living, would be perhaps better prepared than himself to present a paper upon this subject. Nevertheless he would read it in the hope that it might present some points worthy of consideration and discussion.

THE EXHIBITION OF LARGE GROUPS

The increasing tendency of museums to engage in the work of popular education is probably in no way more apparent in their exhibition halls than in the multiplication of pictorial groups of human beings, other animals, and even of inorganic specimens. There is no doubt that a good group interests and instructs the average visitor vastly more than do exhibits of ungrouped specimens, because they come the nearest to showing things as they actually occur in nature. They are realistic, and tell their own story to a much greater extent than do individual specimens.

Practically all museums are giving much attention to this work, but it is probable that no museum man is entirely satisfied with the results which he obtains. There are always some undesirable features that can not be eliminated and which detract from the finished group to the annoyance of the maker. Bad lighting, artificiality in appearance, and incongruous surroundings are probably the chief of these.

The perfect group should have correct artistic placement of its component elements and should carry out the idea meant to be portrayed so that the beholder may not be reminded that he is only looking at a counterfeit.

It must be properly lighted, so that obscuring and annoying reflections are not given off from the glass. And it should so be placed that other and ofttimes incongruous objects are not in sight at the same time. If one is looking at a snow scene of musk oxen it certainly is not conducive to its proper appreciation to have the sight go through and beyond the case or to one side of it and see at the same time a summer group of American bisons. This latter point, inharmoniousness of surroundings, is a universal fault to which I feel that insufficient attention has been given; perhaps for the reason that buildings are not planned to obviate it but rather in a way to make it the most difficult to meet.

In the Public Museum of the city of Milwaukee the glass reflection has been a very serious matter, naturally most annoying in the hall of mammals, where are the largest cases. This hall runs north and south, is about 250 x 55 feet in size and being on the ground floor is mostly lighted by east and west windows. Much of the upper light that would naturally come from the rather tall windows has been sacrificed to architectural effect. There are several groups in square cases each side of which are single plates of glass eleven feet square. These were built before I took charge of the museum and, although in recently built cases I have increased the glass length up to sixteen feet, I have decreased the height to about nine feet.

The conditions of light are such, however, that in these large groups I have not dared to use backgrounds on account of the amount of light that they would intercept and which would rob other parts of the hall where it is needed. The posing of animals in these four-sided cases is unsatisfactory. Four fronts and no backs can only be obtained by compromises which leave none as effective as they could be made were they the only ones, and the omission of backgrounds greatly curtails the local color that is attempted in the accessories.

The inharmoniousness of surroundings is marked when one can look clear through a case and see people and other unrelated groups beyond, but perhaps most noticeable of all defects is that of strong reflections from the glass under certain light conditions. I have unsuccessfully attempted to overcome this by the introduction of holophane globes containing electric lights placed in the upper corners of one of these cases, but this has made no material improvement and they are conspicuous, distracting, and incongruous.

With certain smaller cases I have been more successful. These have been provided with scenic backgrounds and are illumined by incandescent lights, having parabolic reflectors, placed back of the cornice. This has been carried farther in an anthropological group designed and executed by F. B. Melville in which practically all external light is excluded by the solid walls and roof of the case and the view of its contents limited to a window of moderate dimensions; while the lighting is all by hidden incandescent lamps. The painted background is coved at the corners and carried over the top so as to show no lines of joining. This group is placed by itself in a lobby where there is nothing to distract the attention. The only objection I can find to this style of installation is that it is a trifle theatrical in effect. This, however, I believe to be largely due to the fact that it is surrounded by daylight.

For some years I have talked to various museum men with whom I have come in contact of the advisability of making large group cases with single panes of glass and depending entirely upon interior illumination. My plan would be to have no windows in a hall given to this purpose; to build a case front parallel to a side wall at such a distance from it as might be decided upon, divide the enclosed space into suitable lengths by partitions, cove the corners so that the sides and back should be a segment of an ellipse upon which should be displayed the background and cut a comparatively small window through the front of each division and have this so screened as to cut off the view at the top of the background or else cove the latter into the ceiling. The lighting would be entirely by concealed internal electric lights which in case of the exhibition of nocturnal animals could readily be modified to conform to the requirements while various lesser modifications of illumination as required by different localities could be made.

The hall or passageway outside of the cases would either not be lit except from the reflected light from the groups or illuminated with softened light if this were found desirable.

By this method of exhibition we would avoid all interference by reflection from the glass, would save much space by the elimination of transverse aisles between cases and would, I think, preserve the specimens much longer from fading.

There would also be eliminated the distraction of having many separate exhibits in view at the same time.

In opposition to this plan might be urged the theatrical effect previously mentioned; but upon consideration I am inclined to think that this is merely a matter of subconscious association and that in a hall entirely devoted to this style of installation such a thought would occur to comparatively few visitors and would quickly disappear from the minds of the others.

Besides the advantages already urged for this scheme there is a farther one of great comparative economy. A case which normally would cost a thousand dollars might be constructed in this manner for probably somewhere between one and two hundred dollars. Most of the construction could be of expanded metal and adamant, insuring protection against fire.

Within a few years I hope to have the planning of a material addition to the Milwaukee museum and not wishing to make any mistake I would be very grateful to any one who would make a trial of the scheme that I have outlined or for any criticisms upon it.

F. C. Baker.—"The idea of Mr. Ward has occurred to all of us. It seems to me, after having visited the different aquaria, that they have hit upon the right plan. Why cannot we have our exhibition rooms built in the style of an aquarium, the interior being dark and the groups being exhibited as they are exhibited at aquaria? Many of you saw last year the preparations which were being made for groups in the American Museum. You noticed how excellent the scheme was. It does away with the reflection of the glass, which we know is very bad. I think we ought to seriously consider utilizing this plan. I propose to do so."

F. A. Lucas.—"I trust the members of the Association will kindly pardon me for talking so often and taking part so frequently in the discussions, but this matter of groups has interested me for years, and while Professor Morse is one of the oldest Museum men present, yet I think possibly in the length of time of continuous service I may compare favorably with him. There is, it seems to me, another phase of the group question, as many of the members are aware. The propositions laid down by Mr. Ward have been successfully solved in the American Museum; they have exactly the conditions which he mentions. But there is another side to the question. The question is, will you endeavor to show the animals, or the conditions under which they occur? I do not think that you can make a museum of groups entirely. Even the American Museum would be unable to provide the room and money to carry out such a scheme. In many respects it seems to me best that the background should be subordinate to the animals unless you wish to make the conditions under which the animals occur the most prominent feature of your exhibit. With due deference to Dr. Bumpus I wish to say that it is not easy to get good taxidermists, good landscape artists, and good preparators for the making of accessories. I have found it an extremely difficult matter. On the other hand many excellent small groups can be made by an ordinary taxidermist with but ordinary accessories at comparatively moderate cost. I do not believe that the cost even of a very large case begins to compare with the cost of the landscape and accessory work in a large group. When you take into consideration the time required, the wages which must be paid—for good workmen do not labor for low wages—you cannot expect to secure fine results very cheaply. I am afraid that first-class groups are not within the reach of ordinary museums. There is not a group in our own museum which I would not wish in some respects improved upon. We have been forced to prepare several large groups in our museum representing such objects as seals and buffaloes. In the case of such groups you imagine a small section to be cut out of a territory occupied by these animals, and you may in this way get a good idea of them when your attention is not distracted from the animals to the background. As far back as 1882 I made the suggestion that backgrounds should be entirely subordinated to the animals. Of course where you are endeavoring to show the character of the habitat it is different. I hope Dr. Bumpus will pardon me for apparently differing from him."

H. C. Bumpus.—" I will pardon Mr. Lucas anything."

H. L. Ward.—" I did not intend to create the impression that in my judgment groups should be used to the exclusion of individual specimens. I believe thoroughly in using the same thing many times in order to bring out different features. But I feel that in the long run the relation of the animal to its environment, giving an idea of how the thing exists in nature and what its associations are, is important, and that this can be done much better when you have pictorial backgrounds than in any other way. Take sea lions, for example. The closeness with which these animals are associated in a group would suggest their gregarious habits, and I think that a great many people, because they are used to seeing them brought together in museums in this way will realize that they are gregarious. But if there be a background showing a herd painted upon it, the observer is impressed by the fact of their gregariousness in a way that four or five specimens put into a group cannot possibly cause him to be. As far as the accessories are concerned, they cost about as much in one case as in the other. Three big pieces of plate glass and mahogany to hold them, and a well-painted background, rapidly run into money."

O. C. Farrington.—"I think that a good deal may be accomplished by placing mirrors at each end of the cases, so that the view is only obtained in front, as Professor Ward has suggested. I have tried this method, and hope to employ it to a considerable extent. I do not find the effect especially theatrical. It insures a shading off to natural effects, which is helpful."

F. S. Webster.—"In connection with the subject of groups, whether with background or without, it has occurred to me that a series of photographs may well be exhibited and introduced for the purpose of supplementary instruction. Take, for instance, a seal rookery; a few specimens may be shown in the group, and then there should be framed a photograph showing the seals upon the rookery."

F. A. Lucas.—"Under a seal group in our museum we have a photograph seven feet long showing a rookery half a mile long with two thousand seals upon it. This photograph conveys a far better idea of the facts than any background which could be painted for less than fifteen hundred dollars."

Dr. W. J. Holland.—"The construction of groups is a matter in considering which financial resources must be taken into account. The creation of artistic and beautiful groups, gratifying to the eye, and thoroughly realistic and instructive, is in spite of all that has been said a somewhat expensive undertaking. The first cost of the material which is employed may be very small, but the cost of the artistic labor, which is involved in the production of a group, is often very great. We have, in this museum, several groups of which we think very highly. One of these was made by Mr. Webster, who has just taken his seat. It represents a setter dog, the ancestor of many of the finest dogs of his race in this country, in the act of flushing a covey of quails. The old rail fence, the sumach bushes, and the briars, all suggest things familiar to every one, but I happen to know that these sumach bushes cost Mr. Webster three or four months of work. The getting of those fence rails involved a considerable expenditure of time and also of money. The group is not inexpensive, though it represents a familiar scene. I think, as it is mounted, it cost the museum in the neighborhood of two thousand dollars. If an attempt is made to illustrate the facts of natural history on the scale that is represented by this group the result will be a very large outlay of money, and there are very few museums in a position to engage in such an undertaking. I highly approve of groups, but they should be used judiciously, and the director of any museum should consider with great care how much space he has at his command, what are the groups which in a well-ordered exhibit of the truths of nature he wishes to have made in order to illustrate these truths. Groups may be multiplied indefinitely, but the question for the director to decide is what particular truths of natural history are so important that they ought to be emphasized by the construction of an expensive group. If we allow ourselves to be led and controlled by our friends, the preparators, who are largely guided by artistic impulses, we may be involved in outlays which will indeed produce things artistic, but which it will not be our wish to preserve for all time."

George A. Dorsey.—" I wished to make a remark of that sort myself. It seems to me that the question is after all 'Do these groups pay? Do they advance science sufficiently to justify the money invested in them?' I am not pretending to answer that question, but it seems to me to be a serious question and one which every director of a museum should take into consideration.

" It is proper to bear in mind that these groups are not produced simply for scientific purposes. Museums exist for the entertainment of the people as well as for their instruction. The expenditure of money upon groups is for entertainment, and good results are achieved thereby. A fine group such as that to which Dr. Holland has alluded, showing the quails in their natural environment, if painted by an artist, might be sold for fifteen or twenty thousand dollars, but the painting would not afford as much entertainment as this group, or numerous other groups in the American Museum and kindred institutions. The justification of groups is to be found in the entertainment which they provide, and I appeal for the entertainment of visitors as well as for their instruction."

W J McGee.—"It seems to me that the issue is well raised by the gentlemen who have last spoken. The issue is between scientific research on the one hand and education on the other. I think the prime function of a modern museum is education. The way in which science is best advanced is through research in the fields of nature and not in the museum. In order, however, that we may have naturalists forever with us and have an appreciation of the outside world we must educate the growing minds. The function of a great public museum is education, the implanting in the minds of children and laymen of interpretative nuclei, interpretations of nature as it is represented, perhaps pictorially, but calculated to create an appreciation of nature in such a manner that the mind is stimulated and set to work. The purpose of a museum is to stimulate the minds of children so as to open intellectual vistas for all time to come."

Robert C. Hall.—"I am a layman, but as a member of the Association I am glad to have heard these definitions of the purposes of a museum. I have, however, an abiding and growing conviction that a museum has still another function. Groups may be for entertainment, and museums for education, but it seems to me that one of the great functions of a museum is the preservation and exhibition of historical objects which we wish to preserve in fireproof buildings frequented by and open to the public. I do not believe that a museum is a college, but a store-house of the past, preserving the past for those who are living today and for those who shall live in the future. It seems to me that this is one of the grand ends of a museum."

Benjamin Ives Gilman.—"The ideas so interestingly brought out in the remarks that have been made by those who have just spoken may be found expressed in Professor Flower's 'Essays on Museums.' Professor Flower went so far as to say that he thought the first purpose of museums of science was the preservation of the data of science; the second purpose was education. But I do not know that he regards this order as absolutely essential. Museums have these two objects, to preserve the data of science and to impart to the people at large pleasure and instruction."

The Chair.—"I am so glad to have those who are interested in the fine arts express an interest in the discussion. They have hitherto preserved a discreet silence."

W. J. Holland.—"This discussion as it has proceeded has reminded me of the story of the blind Hindus who were asked what an elephant is like. One of them, who had carefully felt his leg, said that the elephant resembled the trunk of a tree; another, who had handled his trunk, declared that he resembled a serpent; and a third one, who had felt his tail, declared that the elephant was like a rope. Museums may be viewed from different angles and may be judged to exist for one or the other purpose according to the attitude of the observer. Those of us, however, who are most familiar with museums and their work, realize that they combine within themselves a number of purposes. One end, as has been observed, is the preservation of the data of science, so that the student of the present and the future may be helped in his scientific work. It is necessary to provide in every well-arranged museum for abundant storage space and for laboratories and for literature, so that the things which have been written about and that which has been said in reference to them may be brought together. A museum is also a place in which instruction is imparted to the masses and in which they receive instruction in a pleasurable form, being entertained even while they learn. These, then, are the ends of a museum: The preservation of the records of science, the advancement of scientific research, the instruction and entertainment of the masses.

"The subject before us, however, Mr. President, is the use of large groups. I have taken part in the discussion simply for the purpose of pointing out that there is a limit beyond which museums must not and cannot well go in attempting to teach the truths of nature by means of large groups."

The Chair.—"We have been interested in observing that our colleague, Dr. Holland, has begun a group of dinosaurs. Possibly if he would announce the cost of the preparation and installation of this group and compare it with the cost of the installation of a group of whales and the ethnological groups on the third floor of this museum, the zoölogist and the ethnologist might remark upon the extravagance displayed by the paleontologist. But I ought not perhaps to have interrupted."

J. E. Talmage.—"It seems to me that there is no difference of opinion as to the value of groups of the kind under discussion if they can be obtained of suitable quality. Remark has been made on many occasions as to the chasm which exists between those who are concerned in the development of museums of art and museums of science. From what has been said about the necessary features of these groups it seems to me that we have in them a medium for bringing the artist and the naturalist together. In the preparation of such groups there is involved a union of effort between artists and scientific workers. The production of elaborate groups is only rightly undertaken by museums which have a large endowment. Where such groups cannot be undertaken because of the lack of financial resources some of the ends achieved by them may be secured by bringing together and associating objects which are naturally related. Some groups have appealed to me but very slightly as artistic presentations of the subjects which they are intended to represent. In many cases I would have preferred to the group well-mounted single specimens of the animals which they represent. Really artistic groups constructed with strict reference to the truths of natural environment are no doubt highly instructive. Touching upon what has been said concerning the functions of a museum, I am tempted to say that to provide the right kind of entertainment is to minister to the cause of education."

The next paper presented for discussion was upon " Museum Records," and was read by Mr. Paul M. Rea, director of the Charleston Museum, Charleston, S. C.

MUSEUM RECORDS

The system of museum records here described was devised to meet the conditions presented in a reorganization of the Charleston Museum, but since the problems of organization are so nearly similar in the smaller museums, at least, the methods which are proving effective in one instance may be helpful in others.

The conditions referred to were the necessity for a revision of extensive collections in zoölogy, geology, anthropology, botany, and fine arts—the accumulations of more than a century—with the help of untrained assistants and the aid of specialists in only two or three departments. Data, scattered on loose labels and in old memorandum books, had to be associated with their specimens before these could be handled or any active work inaugurated.

It was obviously impossible to commit the museum to any system of records which would not have to be modified as work progressed and departmental curators were added to the staff. Flexibility, therefore, was the imperative requirement of any system that might be adopted in this case, as it should be in that of any growing institution.

An excellent paper on "Cataloguing Museum Specimens" has recently been published by Prof. L. B. Walton[1] in which will be found an admirable discussion of the data to be recorded in natural history collections. Inasmuch as these data are practically identical with those already adopted in the Charleston Museum it is unnecessary to discuss them in detail here. In the method of arranging and recording this information, however, the system here set forth is believed to possess the advantage of greater flexibility, economy of space, and, in the case of the accession record, the important advantage of more permanent form.

The divisions of the catalogue are four, three of which—(*a*) accession record, (*b*) specimen record, (*c*) finding list—correspond with the divisions advocated by Walton, and a fourth, (*d*) list of sources, has been found expedient to meet a constantly recurring demand for special information.

(*a*) ACCESSION RECORD

Every lot of material, whatever its nature and whether consisting of one or more packages, is given an accession number when received at the museum. These numbers are consecutive and the number assigned to any accession is conspicuously marked upon each package in the lot. The business history, etc., of the accession is then recorded under this number in an "Accession Book." For this purpose a 500-page record-ruled book, such as is carried in stock by all stationers, has been adopted. The right-hand page is used for the original entries, the opposite page being reserved for subsequent annotations. The accession number is written in the margin and beside this is entered all the information available concerning the accession, *rubber stamps* with permanent black ink being used for each item of the record (*e. g.,* contents, locality, purchased from, etc.) in place of the printed form commonly used elsewhere.

The use of rubber stamps in place of printed columns was determined upon in the interests of flexibility and economy of space. It is desirable to provide for the entry of a wide variety of items for different kinds of material, and any printed form including all of these wastes much space. Rubber stamps are cheap, and by the *selection* of those needed for any particular entry the record is much condensed and is of practically the same form and size as the library card advocated by Walton. Stamps for additional items may be easily provided at any time and, incidentally, the stock form of book is much cheaper than the specially ruled book.

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[1] *American Naturalist,* Vol. 41, No. 482 (February, 1907), pp. 77–96.

Since the accession catalogue is essentially a continuous record of the growth of the museum, it should be impossible to remove, disarrange, or add to this record, without leaving evidence of such changes. A bound volume is therefore considered preferable to the card system advocated by Walton. The use of rubber stamps gives to the book all the advantages claimed for the card system, except the "removal of useless records or addition of new matter." This exception, far from being an advantage, is, is reality, a positive evil in connection with an accession record.

(*b*) SPECIMEN RECORD

Whenever the specimens in any accession are unpacked and worked up, each is given a specimen number, and this number is either painted on the specimen, as in the case of minerals and rocks, or driven into the wooden mounts with steel figures, or in some way permanently associated with the specimen. All the specimens in the museum are numbered in one consecutive series, but blocks of 1,000 numbers are assigned to each department. Thus, 1,001–2,000. 4,001–6,000, 9,001–10,000, may represent all the birds in the museum, while the intervening thousands have been assigned to other departments. When the numbers assigned to any department have been used, it receives the next vacant thousand.

The specimen numbers of all the specimens in any accession are added to the accession record and each is then entered upon a card which is to become a part of the specimen catalogue. The specimen card receives also the accession number of the lot to which the specimen, or group of specimens, in question, belonged, and to this number reference may be made for the business history of the specimen. The scientific history of the specimen, together with other information concerning it, is entered in concise form upon the to good reproductions (photographs or collections of plates). They offer for the studious public and for the staff the closest substitute for direct approach to originals which are out of the reach of some of us all the time and of all of us most of the time. Moreover in a smaller museum, especially a university museum, they may and often do, form a reservoir from which to draw very attractive temporary exhibitions. An adequate nucleus for a collection should consist of representative examples of the sculpture of Egypt, Greece, Rome, and France in the Gothic period; painting of Italy in the trecento and Renaissance; of Holland, Belgium, and Germany in the sixteenth and seventeenth centuries, of England and France in the eighteenth and nineteenth; also enough typical examples of architecture to furnish the setting for the two great decorative arts. If wisely selected it need not consist at first of over 3000 plates; once formed it would easily be enlarged by completing the work of single men or periods as occasion required. We shall see later that, though the number of the nucleus sounds formidable it could be acquired in the course of two to three years, at an expense of $600 to $900 per year.

But the photographs will not be serviceable unless properly installed, labeled, and cataloged. For this a small working library is necessary and we may well base our first purchases of books on the needs of the photograph department.

For adequate labeling (it must be borne in mind that the public will read what is written on the back of the photograph where they will not take the trouble to consult books) the first requisite is a set of good general histories of art. For example the field of Italian painting is pretty well covered by Crowe and Cavalcaselle; for the northern schools through 1700 Kugler-Crowe answers passably. For Greek sculpture E. A. Gardner's *Hand Book*; for the medieval period Michel *Histoire de l'Art* and Venturi *Storia dell' Arte Italiana*. These should be supplemented with museum catalogs and, for countries like Italy where the catalogs are often lacking or untrustworthy, by such general lists of works attributed to given artists as may be found in Berenson's series, Lafenestre or the Burckhardt-Bode *Cicerone*. A complete set of up-to-date Baedekers is also essential.

Furthermore as many of the public are eager to learn "who's who in Heaven" the cataloger will want standard works on Iconography. The field for classic and Christian art is pretty well covered by Smith, *Dictionary of Greek and Roman Mythology* (Roscher is of course better but is incomplete), Mrs. Jameson *Sacred, and Legen-*

dary Art, Lowrie, *Monuments of the Early Church*, Didron, *Christian Iconography*, and Mâle, *L'Art Religieux du treizième Siècle en France.*

The reference books, catalogs and iconographical works suggested will be enough to begin on, though the identification of doubtful photographs will be rendered easier by the addition of inexpensive monographs containing reproductions of the entire work of a given painter, such as the *Klassiker der Kunst* and *Kunstlermonographien.*

All of the books already mentioned are useful not only to the keeper of photographs but to the director and curator. The latter will, however, need a supplementary list of special technical publications with good reproductions along lines where photographs are hard to secure or where color is a strongly determining factor (as in the case of Oriental rugs, Chinese pottery, or Greek coins). The purchase of such books may of course be delayed until the special occasion arises, yet if a collection of standard publications is begun early, valuable time may often be saved in emergencies and works in limited editions secured before they acquire those mystic letters "o. p."

The director who is buying old masters will also from time to time ask his librarian to complete the reproductions of some painter already represented in the library or add examples of a minor man in whom he is at the time especially interested.

For periodicals he will require as a minimum, current numbers of one leading English, German, French, and Italian art review of the more scientific sort, of the *American Art News* and the *Repertorium für Künstwissenschaft* and, if his museum has a classical department, of the four of five official national organs for classical archeology.

For the general public, selection involves a more difficult problem. Of the books useful as staff apparatus, some, the foreign periodicals and museum catalogs, will probably not interest them. They will use the general reference books now and then and the illustrated monographs often. Beyond that, some will turn to us for light on deeper aesthetic laws underlying our paintings (a favorite question is: "Why did Whistler paint 'Fur Jacket's' skirt with those vague daubs? You can't tell where the dress ends and the floor begins; is that natural?"). Others again will demand an appalling quantity of general information only remotely bearing on the contents of the museum. One good lady telephoned me recently to find out what material we could offer on "bells." I was about to suggest that Mrs. William James (our delightful Hogarth lady) and Mrs. Perez Morton (a pet Stuart of mine) might serve her turn when she added, "bronze

Other details have been added only where it has been necessary to mark points of difference between the Charleston system and that outlined by Walton, or where they were needed to make the plan of operation clear, or show its feasibility.

It is the only system, in the writer's knowledge, which is flexible enough to accommodate itself automatically to any conditions which may occur in the future, including the creation of new departments and the demands of specialists in various groups.

Upon the conclusion of the reading of the paper by Mr. Rea the Committee on Program announced the program for the evening session, and the Association adjourned in order that the members might have an opportunity to visit the parks and residential portions of the city of Pittsburgh, for a tour through which a number of the Trustees of the Institute and their friends had kindly placed their automobiles at the service of the visiting guests.

Evening

The Association reconvened at 8 P. M. President H. C. Bumpus in the chair.

The first paper presented was by Mr. F. A. Lucas upon

THE EVOLUTION OF MUSEUMS

A discussion of the objects of museums may well be preceded by a brief sketch of their origin and evolution, and, if some of my remarks sound trite to our older members, they may be of interest to our visitors and younger members. For the character of museums has changed so greatly during the past half-century that those who know these institutions only as they exist today may not realize how widely they differ from what they were even twenty-five years ago. Any dictionary will tell you that museum comes from muse and that from meaning a grove sacred to the muses, it has come to mean an institution devoted to the arts and sciences personified by these divinities. But, as the muses in turn are believed to have evolved from the nymphs, which, dwelling in fountains and forests, are the embodiment of the very spirit of nature itself, so museums, from being mere recorders of scientific facts, have come to devote their energies largely to displaying the denizens of field and forest in such manner that the varied life of distant regions may be set before the dweller in towns.

We are usually referred to the museum at Alexandria for the beginnings of natural history museums, but this was hardly a museum in the modern sense, while the germs of such institutions are to be found far earlier than that. About 325 B. C. Alexander the Great brought with him from India and elsewhere specimens for the use of Aristotle, the father of natural history, and earlier still Hanno, the Carthaginian, on his voyage down the coast of Africa, secured the skins of Gorillas, which on his return were placed in the Temple of Astarte, perhaps the first record of specimens being placed on exhibition. And it may not be amiss to note that a portion of this same temple, though probably of much later date than the time of Hanno, is now in the National Museum at Washington. While a variety of causes have contributed to the formation of museums of natural history, the curiosity of man—nowadays we term it his thirst for knowledge—lies at the very foundation of our museums of science, for they may be said to have originated in the gathering of specimens from distant lands to gratify the desires of men of more or less scientific attainments. And if you will name over the largest museums of the world you will find that they are those of great commercial nations and that they bear an almost direct relation to the extent of the commerce of their respective countries.

As a side issue may be noted the specimens of new and quaint animals that were to be seen at some of the coffee-houses of the seventeenth century. These are worth at least passing mention, for two or three of Artedi's species of fishes were based on such specimens, and they are evidences of the general interest in foreign animals.

Owing to the activity of England in colonizing North America, the United States, that was to be, played a most important part in stimulating the growth of museums, the plants and animals brought from the new world swelling many a private collection that in time became part of some public museum. It is only necessary to recall the number of American plants and animals that bear scientific names given by Linnæus to realize the amount of collecting being carried on in America during the eighteenth century, for two thirds of the reptiles and one third of the birds and mammals described in the famous twelfth edition of the "*Systema Naturæ*" were American.

The collections of scientific societies were, to a great extent, the successors of the cabinets of private individuals, but while these have done a vast amount of valuable scientific work, and some have practically developed into public museums, they have been the last to feel the effect of the ways of progress, to adapt themselves to new conditions, and adopt new ideas. In fact I think we are justified in saying that scientific societies have had less influence in the founding of museums than have the efforts of private individuals.

For a long time museums existed only for men of wealth and men of science, the idea of benefiting the general public being a secondary consideration, if it was considered at all. Sad to say, the first museums to be thrown open to the public at large were founded less with an idea of instructing the visitor than of making money out of his natural desire to see new and strange objects. The most famous of these was the Leverian Museum, London, brought together by Sir Ashton Lever, which contained specimens of such importance that when it was broken up and came under the auctioneer's hammer, representatives of the great museums of Europe were present at the sale.[1] The more familiar of these institutions in the United States were Barnum's and the Boston Museum, both of which, like their European prototypes, sought to add to their interest and revenue by having a theatre as an adjunct. In the case of the Boston Museum the theatre outgrew the museum and came to be the home of one of the most celebrated stock companies in the United States. These institutions were antedated by Peale's Museum, which was also more scientific in its character, and from 1822 to 1828 was installed in Independence Hall, Philadelphia, and later moved to Baltimore, where it was unfortunately destroyed by fire.

Many of these early institutions contained really valuable specimens, but they also contained a large proportion of objects that now find a place by themselves in the well-known dime museums, which in a way are their direct, if degenerate, successors.

Peale's mastodon, the Warren mastodon, and the Missourium of Koch were thus exhibited, and were to be seen for a consideration, although eventually one found its way to the British Museum, and one has recently come to the American Museum of Natural History.

[1] A most interesting account of this, and similar institutions, by Prof. Alfred Newton, is given in the Proceedings of the Museum Association of Great Britain for 1891, page 28, "Notes on Some Old Museums."

While such things as these were not so few in number as to be exceptional to the general rule, yet a vast number of objects were of that class rightly called curiosities, a comprehensive term that embraces a vast and miscellaneous category of objects, including the familiar and ever-present petrified potato and four-legged chicken. If there is anything that a museum has no use and no place for, it is the mere curiosity, but, as John Minto says in a recent article, "It will take years to do away with the idea of museums still entertained by many that they are storehouses of curiosities."

Thus the cabinet of the mere gatherer of curiosities, the collections of men of science, and the museum open to the visitor upon the payment of a fee, have each and all played their part and paved the way to the real public museum. Expositions, numerous though they have been, have done little to change the character of natural history museums, although they have led to the establishment of some. Their influence, however, has been felt by the public, who have been made acquainted with their work, and especially of that of our own National Museum.

The public museum, that is, the museum free to the public and owned or operated in whole or in part by government, either state or municipal, may be said to date from the opening of the British Museum in 1759, although admission to this great institution was at first by ticket and limited to thirty persons in one day. This may be termed the entering point of the wedge, but the idea of making the museum interesting to the public and of any general educational value was yet to come. Our own National Museum was formally created by Act of Congress as late as 1876, although thirty years earlier the Government possessed collections which were in the custody of the Smithsonian Institution.

The following extract from a Guide to "The General Contents of the British Museum," published by Messrs. Dodsley in 1762, will be of interest to those who only know museums as they exist today:

"Some of my readers may be ignorant of the Manner of applying to see the Museum; for their Information I shall add, that fifteen Persons are allowed to view it in one Company; the Time allotted is two Hours; and when any Number not exceeding fifteen are inclined to see it, they must send a List of their Christian and Sirnames, Additions, and Places of Abode, to the Porter's Lodge, in order to their being entered in the Book; in a few Days the respective

Tickets will be made out, specifying the Day and Hour in which they are to come, which on being sent for, are delivered. If by any Accident some of the Parties are prevented from coming, it is proper they send their Tickets back to the Lodge, as no body can be admitted with it but themselves. It is to be remarked, that the fewer Names there are in a List, the sooner they are likely to be admitted to see it."

But as the British Museum was perhaps the first to open its doors free, if not freely, to the public, so it was one of the first at least of the larger institutions to consider the question of making its collections interesting to the ordinary visitor.

Here I will confess that I have been surprised to find that such men as Owen and Günther, who might well be considered as caring nothing for the educational or esthetic side of the museum problem, were among those to advocate making museums of general interest. Perhaps these are among the many instances where museum officers have been wrongly judged and blamed then, as they are today, for the existence of conditions for which they are in no wise responsible.

The British Museum was, so far as I can ascertain, the first to break away from old traditions and attempt to exhibit animals amid their natural surroundings. It is entirely probable that the example of private individuals contributed largely to this movement and that the little case of birds with a paper rock and tow tree may be the germ from which have grown such groups. In fact the change in the British Museum is said to have been directly due to the private museum formed by E. T. Booth, who is claimed to have been the first to exhibit "not merely a collection of stuffed birds but rather a true representation of bird life and haunts."

The importance of the step taken by the British Museum can only be appreciated by those who saw the British Museum in its old and cramped quarters, with every inch of space occupied, specimens even hung against the ceiling, and cases crowded with serried ranks of stuffed animals, many of which might appropriately have been relegated to the care of the department of archeology.

To our British brethren also belongs the credit, not only of being the first to see the educational possibilities of museums, but of having availed themselves of the opportunities offered to a greater extent than any other nation; for there are today in England more museums with popular or educational features than in any other country.

Development was slow at first, and those who today have the pleasure of uttering those dangerous words, "I told you so," can well remember the cold water poured upon their timid suggestions that any change in the then existing order of things was desirable, and the disfavor with which their modest attempts at improvement were received.

"Spread-eagle styles of mounting, artificial rocks and flowers, etc., are entirely out of place in a collection of any scientific pretentions or designed for popular instruction. Birds look best on the whole in uniform rows, assorted according to size . . . , and set on the plainest stands." So wrote Dr. Coues in 1874, or little more than thirty years ago, and he probably voiced the opinion held by the majority of museum officers of that date. But times have changed. The monotonous rows of birds and mammals are largely relegated to the study series, and their places taken by groups that counterfeit, or at least suggest, nature, and display not merely animals, but show where they live and what they do. Further than this the effort is made to show the methods by which nature attains her ends; variation, mimicry, adaptation to surroundings, the effects of environments, these, and many others, are among the many things museums seek to teach. To anticipate a little, it may be said that here is where a museum has, and should have, a very direct relation to schools by providing good examples of what to the pupil are apt to be rather vague ideas. Mimicry, subspecies, influence of environment, are all discussed in text-books, but their meaning is much better gathered from objects that illustrate these facts. Formerly museums displayed objects merely, now they must be the exponents of ideas, and this changed condition of affairs has been brought about almost within the last twenty-five years, certainly within the last half-century.

This change in the scope of a museum has led to, or been accompanied by, a change in the character of labels, for as the character of museum specimens changed, so also did the labels accompanying them. Formerly a collection was looked upon as well labelled if every other specimen bore a name and locality, the scientific name being placed first as a survival of the time when museums were for scientific men alone, just as women put bows on their dresses as a survival of the time when they were tied together instead of being pinned. Now a label is supposed to tell something about the object it accompanies, the common name comes first and the scientific name modestly follows. Furthermore, to supplement the labels a new class of museum literature has come into existence; we have handbooks written in a more or less popular vein, and many museums issue a regular journal in the shape of a bulletin to let the public know what is being done and to furnish information about the institution, its collections, and its work. In addition to all this we have courses of lectures relating to subjects which the collections illustrate, and these lectures vary from formal addresses to large audiences to talks or demonstrations given to small parties in the exhibition halls.

Thus museums have passed through several distinct stages; at first they were indiscriminate gatherings of "curios," objects of art, and specimens of natural history. Then, by the inevitable process of segregation, natural history came to have a place by itself, the collections of scientific societies developed as storehouses of material, mainly for the use of the specialist and the public museums derived from these were largely dryly scientific in their character.

The next step was for the scientific museum to borrow a page from its predecessor and discarding its mere curios adopt the idea of making collections attractive and interesting to the public. Now we are in the educational stage where the needs of the public are considered as much as those of the student, and the object of the collections, so far as their display is concerned, is to interest and instruct, interest being placed first, because if you cannot arouse the interest of visitors you cannot instruct them.

It has come to be recognized that a collection should not be made hap-hazard, but should have some definite purpose, and the specimens of which it is composed be parts of a connected and consistent whole.

To many this is no doubt a truism, but as some of our visitors may not realize this, I trust the remark may be pardonable.

One reason why a collector of stamps is usually regarded lightly is that he generally has no end in view other than to obtain as many different stamps as possible. The stamps have no definite meaning in themselves, it is what they suggest, not what they show, that is of value. To the stamp collector a surcharged stamp is more valuable than a plain stamp, and one that has been printed upside-down is vastly enhanced in value. But it is a fact that a stamp was surcharged for some definite purpose and marks some historical event of more or less importance that ought to give it value. As for the stamp printed upside-down it is absolutely devoid of value or interest save for the collector, since it illustrates no fact other than that accidents are bound to occur.

It must not be supposed that the naturalist, and particularly the amateur, does not have his fads and fancies, for he is as liable to attacks of this disease as anyone else. The great auk illustrates this point very well. It is not so rare as dozens of other birds, it illustrates no important fact in nature better than a score or more of other birds, and yet mounted specimens, and especially eggs, bring higher prices than any other bird or egg. Why? Simply because the great auk is a fad, and there are just enough specimens to stimulate interest—and bids—when the bird or its eggs come up for sale.

Museums of history are exceptions to the general rule that objects should show something, and so to some extent are museums of ethnology, for these differ from other museums in the fact that their value does not lie so much in the character of the objects displayed as in the associations connected with them. In a way museums of history are museums of ethnology, being records of the culture of a given time and race.

A large portion of the "relics" of great men, considered by themselves would find their way to the junk shop, or ash heap; their real value lies in the suggestions of other times and great events they conjure up. Let me illustrate this as regards ethnology. In the Hall of Ethnology in the Museum of the Brooklyn Institute are ten small pieces of weathered wood, roughly carved to represent the human form. Intrinsically they are of small value, even for kindling, but when we learn that these are ten of the original thirteen war gods of the Old Zuñis, that they were venerated for centuries, that the priests alone might enter their sacred presence, and that it was death for the stranger to despoil their shrine, and they become of great interest. In this case it is not what the objects are, but what they stand for.

A collection of specimens does not make a museum any more than a collection of paints and brushes makes an artist. It is not what we have, but what we do with what we have that produces results, and the true value of a museum does not lie in its specimens alone, but in what it does or what is done with them. It would be possible to have a collection of specimens costing thousands of dollars the intrinsic educational value of which would be practically nothing.

The educational value of any collection depends not on its size, nor the rarity of its specimens, but on what it teaches. Nor does the value of a specimen depend merely on the fact that people wish to see it, for I regret to say that there is an attraction of repulsion, a morbid curiosity, that makes many, if not most of us, wish to see things in themselves unpleasant. There are people who collect bits of rope with which various criminals have been hung, and I remember in my early days gazing with much interest upon some such objects (probably taken from a convenient clothes line) in Barnum's old museum.

So it would be possible to make an exhibition of great popular interest, not one object of which should be publicly exhibited. The two objects most frequently asked for in the National Museum were Guiteau's skeleton and the boots made of human skin.

So much for what a museum should, or should not be. But as theories are one thing, and facts another, it must be remembered that a museum is rarely the outcome of a definite plan, but the resultant of many forces, a compromise between what the director would like to do and what the time and funds at his disposal and the limitations imposed upon him by the architect permit him to do. There are, moreover, two things essential in building up a museum, money and time, and the latter is much more necessary than one might be led to suppose. Given plenty of money—and no museum man has ever been known to admit that he has had a plenty—it is often difficult to bring together the material necessary to carry out well-defined schemes.

And here I will rest the case for the museum; we are not doing for the public what we would like to do, nor what we hope to do, but as fast as possible we shall increase the educational side of our collections. There are more difficulties in the way than the average visitor probably dreams of, and not the least of these are what may be termed purely physical obstacles, the lack of rooms, the unfitness of buildings and cases, the difficulty or impossibility of procuring certain specimens. And as Martha was cumbered with much serving so the museum superintendent is hampered with much housekeeping. There are, indeed, many discouragements in museum work, and there are many times when a conscientious man, knowing the cost of what may appear to the public a comparatively small piece of work, cannot avoid asking himself the questions, 'does it all pay?—does the end achieved warrant the outlay of time, labor, and money it has cost?—what does it all amount to anyway?' And the answer to the questions we leave to time and to the public.

When Mr. Lucas had concluded the reading of his paper the Chair introduced Dr. Benjamin Ives Gilman, of the Museum of Fine Arts, Boston, who presented a paper upon "The Triple Aim of Museums of Fine Arts."

THE TRIPLE AIM OF MUSEUMS OF FINE ART

And its Illustration in the Seal of the Museum of Fine Arts, Boston

My points are four: (1) To state the aim of fine art; (2) to give the reason why art has this aim; (3) to determine the main purposes subserved by museums of fine art and their order of precedence; (4) to call attention to the purposes of the Boston Museum as indicated in its seal.

1. What is the aim of fine art?

There are two radically different ways in which we may be said to know anything. "Je connais" means "I know"; "Je sais," "I know"; but the first means acquaintance, the second information, two very different things. To be acquainted with anything means to have experience of it; to know about it means only that this thing has been an object of our thought. Romeo's exclamation, "He jests at scars who never felt a wound," brings out this distinction between acquaintance and information. The topic of love had occupied his comrade's thought, more perhaps than his own, but it was his fate alone to experience the passion. We say, "Practice what you preach," meaning again that to talk about a matter is a very different affair from living it through. "Let not him that girdeth on his harness boast himself as he that putteth it off." Why? Because the former boasts about an object of thought, the latter about a subject of experience.

This difference admitted, just wherein does it consist? In this, that to be acquainted with a thing is to know the thing itself; to be informed about it is to know its relations to other things. Benvolio and Mercutio knew love in all its bearings, in its causes, its signs, its results, but they had not known the thing itself that springs from these sources, has these manifestations, and bears these fruits. There is no more fundamental distinction known to man than that between things and the relations of things, and it is this deep difference that obtains between acquaintance and information. To be acquainted with a thing is to have enter one's consciousness the sensations, the thoughts, the feelings, into which that thing can be analyzed. The event called the battle of Waterloo consisted, among a myriad other matters, of the flash of guns, the sight of reddened soil, and of bodies of men in movement, the volleys, the cries, the efforts, the terrors, the rage, the despair, the unimaginable torture, the dumb approach of death; all the infinite abyss of experiences that passed in scores of thousands of souls a hundred years ago on the Belgian plain. To be informed about a thing is to turn one's thoughts upon a complex of experiences of which it is composed. To know about Waterloo is to learn its date, its theatre, its progress, its causes and results, its place in the lives of the participants and of the nations they represented; in short, to envelop it in any web the thoughts are capable of weaving with reference to that past event.

This distinction being admitted and being clear, my first point is that the aim of art is to impart knowledge in one of these senses and not in the other. The aim of the artist is that we should become acquainted with his product, not that we should be informed about it. The thing itself, and not its bearings, is what the artist is interested in and wishes us also to admire. Though we master the whole literature of Balzac criticism, yet if we never read one of his works, we shall have wholly missed his aim in writing them. Hence it is that the artist is called *ποιητής*, the creator of things. For what is a thing, and what is it to create? A thing philosophically analyzed is a bundle of experiences, a certain combination of sensations, thoughts and feelings, and to create is to bring into being the permanent possibility of such a complex. This is what the artist does. The aim of his creation is that others after him should in contact with his work see, think, and feel with his eyes, brain, and heart. A work of fine art is, therefore, a record of experience, made in order to acquaint others with his experience. It is a language made to communicate this experience to whom it may concern. Thus, as Albrecht Dürer wrote, in artistic production, "The secret treasure of the heart, gathered (by observation) is made manifest through the work and new creation which a man shapes in his heart in the form of a thing." (On Human Proportion, Book III, Excursus.)

It is true that any bundle of experience, any thing, can be reasoned about, as well as perceived. We can turn our minds from the thing itself—for instance, a work of art—to its bearings upon other things. We may not only go through an experience, we can also weave a limitless web of thought about it! But from the point of view of the artist any such web of thought is a by-product of his work. The immediate purpose of language, and of fine art as one form of it, is to communicate something, not to elicit a response. The spectator's perception of a creator's achievement, his apprehension of all that it was made to be,—this it is, that completes an act of creation. Mozart said of musical composition, "When all is done, and I can review the whole at a glance from beginning to end, that is a revel" ("Da ist ein Schmaus"). So the Book of Genesis records the fulfilment of the creative purpose when after each day's work "God saw that it was good."

2. Yet a world or a work of art surely must exist for something, we may say. This is my second point. Why does art pursue the aim it does? This aim, we may admit, is to perpetuate a certain experience, to put it permanently in the power of others to live over again certain moments of the artist's life. But what for? What is the use to the many of this vicarious existence through a few gifted people? Shall we say to broaden our minds? The question then recurs, what is the use of broadening our minds? Not to lose time in thinking up further answers, let us call this use, this purpose, whatever it is, C. Again the question recurs,—what is the use of C? Let us say D. Well, what is the use of D? Let us say E. Evidently there is no end to this chase, until we reach something valuable in itself and not solely valuable through an ulterior use. Either nothing is worth while, the whole universe vanity, life not worth living, or some things are desirable for their own sake. Such things certainly exist. Virtue is one, unless the common phrase, "Virtue is its own reward," is an empty claim. Happiness, another, for who asks what use there is in being happy.

We return, then, to our starting point with a new question. May not the experience which an artist is impelled to record in a work of fine art be a valuable thing in itself? May it not be that the motive which gives rise to what we call the fine arts is the fact that certain of our experiences, which are capable of outward embodiment, are too precious in themselves to lose?

This is indeed an opinion common among leaders of the world's thought. Aristotle was the first western thinker to differentiate clearly between fine art, as that whose product is valuable in itself, and useful art as that whose product is valuable through some result external to itself. Laotze in China two centuries before, had spoken of beauty as *"the usefulness of the useless."* The conception reappears in Kant's definition of beauty as "Zweckmässigkeit ohne Zweck" (Purposiveness without purpose). Emerson repeats it in his "Beauty is its own excuse for being."

True that works of fine art have value through their fruits, as well as in themselves. They are useful, both without the maker's intention and with it, as well as beautiful. Their friendship forms spirit and style, and most are expressly designed to subserve ends apart from that of conveying their content—the painting, to fill a space upon the court-room wall and rest the eyes and refresh the minds of the throng below—the sculptured group to honor and protect the dust it covers. Moreover, the intended use of a work of art may be, and often is, the chief purpose of the maker, rather than its beauty. Like Demosthenes, aiming rather at a march against Philip, than at impressive persuasion, he may be artisan, the purveyor of means, before he is artist, the creator of ends. Still further, the idea of the intended use of a thing may become to us part and parcel of the thing itself: the ship may be gallant, the weapon cruel. Beautiful as a useless or noxious creation may be, another at once salutary and more beautiful is conceivable, and, as we may trust, actual. But it is the idea only of utility that may thus contribute to beauty; the reality remains wholly apart from it. Artistic value and practical value differ as the nature of a thing from its effect; beauty entering into the work, utility flowing from it.

These two conclusions, as to the aim of fine art and the reason for this aim, may thus be summed up:

The Aim.—To acquaint others with the product of our own fancy (not to develop information about this product).

The Reason.—Because this acquaintance is itself worth cultivating (not because it brings us ulterior advantages).

Here we have two distinctions:

1. Between acquaintance with, and information about, works of art.

2. Between the good they are (exemplified in their beauty); and the good they do (their utility).

Fine art is concerned with the first member of each of these alternatives. The creative artist aims that beholders should be *acquainted* with a fancy whose *inherent worth* has inspired its perpetuation.

3. Upon this understanding of the aim of fine art and the reason for its pursuit, what are the main purposes of a museum of fine art and what the order of their precedence?

Returning to the two alternatives just stated, the second and extra-artistic member of each still remains to be considered. We may, *first,* not only acquaint ourselves with works of fine art as the artist intends, but inform ourselves about them; and, *second,* not only enjoy their beauty, which is also his intention, but profit by their utility. Hence out of these two distinctions there emerge finally three possible attitudes toward a work of fine art:

(*a*) The artistic; the attitude of the seeker after appreciative acquaintance with the work, in accordance with the artist's intention.

(*b*) The scientific; the attitude of the seeker after information about the work, independent of the artist's intention.

(*b′*) The practical; the attitude of the seeker after results from the work, independent of the artist's intention.

A word to justify and ensure a passive interpretation of the term "artistic." Derived directly from "artist," it signifies properly the attitude of creative labor. Applied by extension to that of a spectator of the result, the term signifies that the impression received is that intended. So used the word acts to keep alive the ancient error, already condemned in the phrase, *"ars est celare artem,"* that the machinery of its construction is part of the content of a work of fine art. The term "aesthetic" is exempt from this danger, referring solely to acquaintance (αἰσθάνεσθαι, to perceive by the senses)—as scientific (*scire,* to know about) in information; and practical (πράσσειν, to bring about) to results. But unhappily the suggestion of frivolity now attaching to the term "aesthetic" and its derivatives forbids their popular use, and with this warning to the reader, the term "artistic" is here employed to mean not "creative" but "appreciative."

The influence of any permanent public exhibition of fine art, any art museum as it is called, is exerted upon persons taking each of the three attitudes just named. They are represented respectively by three clearly distinguished, but not mutually exclusive, classes of visitors.

The artistic attitude is that of the whole public. The one aim common to every visitor is that of *appreciative acquaintance* (with the objects shown).

The scientific attitude is that of students of history. Their aim is *information* (about the objects shown).

The practical attitude is that of craftsmen (comprising artists, artisans, and art students). Their aim is *guidance* (by the objects shown).

A word of comment on these aims. Both historical and professional study may aid appreciative acquaintance, although neither is indispensable, still less suffices to ensure it. Both sharpen observation, but five teachers—the eyes, life, travel, the historic sense, and art itself—are more helpful than science; while skill, if it divert the mind from achievement to method, may even be a handicap. Again: no others than technical students take the utilitarian point of view independently; for the spiritual uses of works of art are realized through appreciative acquaintance with them, and their material uses are obsolete in the artificial environment of a museum, where the sword no longer defends, nor the cup refreshes.

The question of precedence among these purposes admits of but one answer. In a treasury of creative genius the creative aim is paramount. A museum of fine art should seek first the spread of that appreciative acquaintance, which is the goal of fine art. Subject to this prior duty it should administer its possessions both for purposes of historical study and purposes of professional utility, both as scientific specimens and as technical aids.

It is the people at large whose contemplative attitude toward a work of fine art fulfills more or less adequately the creative aim of the artist, for whom a museum of fine art primarily exists. The archeologist and the craftsman, whose attitudes of investigation and emulation respond to no intention on the artist's part, have a secondary, although indefeasible, standing therein.

4. *The Purposes of the Boston Museum as Indicated in its Seal.*—Thus far an academic discussion of the purposes of an art museum: what they are, and what their relative importance.

Now, actually and in particular, does the Museum of Fine Arts in Boston, recognize these three purposes and in this order of importance—the promotion of artistic appreciation first, and of scientific study and technical training second?

No real person can answer this question. Only the legal person, the body corporate, made responsible for the institution by the Legislature of Massachusetts. An individual can only ask whether the Trustees of the Boston Museum have ever adopted expressions of their purposes, which admit of such an interpretation. This question may be answered in the affirmative, subject always to correction by the Trustees themselves.

The seal of our museum, adopted 1871, bears as its central device three interlaced rings, one above containing the word "art," and two below containing the words "industry" and "education."

That this device signifies the same three purposes in the same order of precedence as determined by the foregoing analysis—art first, craftsmanship and learning second—is an inference from the following statement of the aims of the museum contained in a report adopted by the Trustees in 1883:

"We must assume (as the foundation of it[1]) that the Museum is to be what its name expresses, a Museum of the Fine Arts; that its primary intention is to collect and exhibit the best obtainable works of genius and skill; that the application of the Fine Arts to industry, and the illustration of the Fine Arts by archeology, are both within its province, but that neither of these is its first object."

The two questions proposed to me for discussion here were: What are the aims of an art museum? What are the aims of the Boston Art Museum?

The answer here given to the first question I offer upon my own responsibility solely; that to the second I offer as my personal interpretation of certain past utterances of our Trustees which may or may not be so interpreted by the present board.

Dr. George A. Dorsey, of the Field Museum of Natural History, then read an address upon

THE AIM OF A PUBLIC MUSEUM

The function of any institution, especially of a public museum, must be determined to a certain extent by circumstances. There are, however, certain fundamental principles which, it seems to me, are applicable to museums in general. First and foremost it should be the aim of the museum to promote the advancement of the subject, whether it be art or science, which is embraced within the scope of the museum. By advancement I mean not so much what is commonly understood as the diffusion of knowledge, as the advancement which results from new investigation. I believe that it is the duty, and should be the aim of every institution, to undertake as much investigation as possible.

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[1] That is, of "a scheme for the purchase of original works," called for at the time.

In the second place, the aim of the museum must be determined by the requirements, not of the present day, but of future generations, for an institution, especially any museum of wide range, which attempts to adapt itself to the supposed present requirements of any community will find that it has largely surrendered its power for investigation; above all it will find that it cannot adequately serve such a requirement, inasmuch as from the very nature of the attempt its exhibition halls must always be in a transient condition.

We may say then that the aim of the museum, so far as its exhibition series is concerned, should not be addressed primarily to the supposed needs of a community, but that it should be governed in its exhibition of material by the desire to present the universal facts or laws of its science which will be of the widest possible application.

In other words, its aim must be, both in its laboratories and in its public halls, to promote the discovery and the exemplification of the fundamental principles of the subject or division represented; and these principles, of course, are the same for whatsoever branch of science the museum may be devoted, whether it be ethnology, geology, fine arts, or history, for, as all science is one in its methods, the general principles which govern the aims of a scientific institution must be the same.

So much for the general principles, which in my estimation are applicable to museums of whatsoever nature. One or two points of minor importance may be considered. You are all familiar with G. Brown Goode's words so often quoted: "An efficient, educational museum may be described as a collection of instructive labels, each illustrated by a well-selected specimen." A museum arranged on this plan may, in my estimation, be efficient and may be educational, but it would not necessarily be scientific, and it certainly would not have general public interest. It seems to me that the conscious striving to make the public museum educational, defeats the object of the museum and causes it thereby to surrender a very much higher function.

Still another statement of Goode's seems in this connection worthy of a moment's notice, namely, that, in which he defines a museum as "an institution for the preservation of those objects which best illustrate the phenomena of nature and the works of man, and the utilization of these for the increase of knowledge and for the culture and enlightenment of the people." This definition of a museum may have seemed adequate twenty years ago, but an institution which today states as its primary aim the preservation of objects is foredestined to mediocrity. This is preëminently true of certain departments of science such as ethnology and paleontology. I single out these two departments of science because of them it is, as I have said, especially true, that their function is not the preservation of specimens so much as it is obtaining them; and this, of course, is simply a preliminary step to their study, from which is to follow the generalizations representing fundamental biological principles. In still another place Goode states as the function of a museum, "the preservation and utilization of objects of nature and the works of art and industry"; and to this I must again insist that the importance thus attached to the preservation of objects as the special function of a museum is against the highest welfare of any great institution, and that especially it relegates the true function of a museum to the background.

While not bearing specifically upon the chief aim or function of a museum, there is still another matter that seems to me worthy of consideration. This has to do with the storage of material. I suppose that every museum administrator has no difficulty in conceiving good theoretical grounds for the storage of large amounts of material, but I believe the general principle of storage, except in special instances, is bad, and even often vicious. My chief reason for this statement is based upon the fact that storage material tends to deteriorate; especially does it lose much of its vitality. This is to a large extent unavoidable, and the explanation for the reason thereof is a psychological one. My experience is that storage material is not examined, and that so-called "study collections" are not studied; and, except in a very few instances, I doubt greatly whether science has been advanced to the extent of the price of the bottles, to say nothing of the cost of the alcohol, for all the rows and rows of jars of fishes and snakes which are to be found in almost every museum which even dabbles in natural history. Certainly an examination of the so-called study collections of storage material of ethnology generally reveals a sad state of affairs. It seems to me that too often the museum curator assumes the attitude of the farmer, who, unable to throw anything away, hoards everything up with the expectation that some day it will be of use. Specimens in themselves are not sacred. Their value lies not in themselves, but in the light they throw upon the great problems of the universe, biological or otherwise.

I may state in conclusion that I consider the chief aim of a museum the advancement of science. This is its function; it must not go to the public; it must lead. Science is but a description and is always simple and easily understood if properly presented. This does not imply that a casual visitor will grasp the principles of any science by a visit of an hour or so in any museum; this does not necessarily follow any more than that one should understand astronomy from a few visits to an observatory.

The promotion, the advancement of science in the laboratory, and the writing in large letters of the laws of science, this should be the aim of every public museum.

Mr. Henry L. Ward, of Milwaukee, presented a paper, an abstract of which follows. It was entitled

THE AIMS OF MUSEUMS, WITH SPECIAL REFERENCE TO THE PUBLIC MUSEUM OF THE CITY OF MILWAUKEE

There are many kinds of museums and any of these may be established and maintained by (*a*) the government of a nation, (*b*) of a state or of a city, (*c*) by a university, college, or school, (*d*) by a society or association, or by an individual; or they may be sustained by a union of two or more of these. Many combinations of kinds of museums and of sources of maintenance are possible and in fact exist, and these factors largely determine the aims and objects of these institutions. In a general way it may be stated that museums come under the following heads: (*a*) for the preservation and record of specimens, (*b*) investigation and the diffusion of knowledge, (*c*) entertainment and recreation of visitors. Most museums combine two or all of these objects so that differences in policy and consequently in the arrangement of exhibits is largely determined by the relative prominence given them.

The private museum or that of an association may be planned to suit its owner or owners and its aim will probably be as an aid to research. Receiving no public financial aid it has no debt to pay in this direction and can not be expected to assume the burden incident to public education.

University and school museums are to furnish illustrative material for the teacher, to serve as reference museums for the students, and, in the case of the university, to supply material for research work.

Museums established by nations, states, or cities are supported by public funds, and so owe to the people of these the greatest possible return for the money invested. This can not be given in one direction only, but should include recreative pleasure, popular instruction, the advancement of science by research and exploration, and the publication of the results of these. They owe a debt to all classes of citizens and must afford pleasure and instruction to the masses as well as means of research for the scientist.

As the former class is greatly in the majority and most largely pays for the support of the museum, the exhibits should be so arranged that they can get the greatest good out of them; while the reserve or study collections will most interest the specialists. As an exhibit can hardly be equally satisfactory to both classes, care must be taken to convey definite ideas that are within the grasp of the ordinary visitor.

The Public Museum of the City of Milwaukee, now twenty-five years old, was established by the city as an independent part of the city government, and with the exception of some early popular subscriptions and the bequest by an individual of a collection and a considerable som of money for its increase, the support of the museum is solely by a fixed proportion on the assessed value of the tax-paying property of the city.

When the writer took charge of this museum some five years ago he found the general public seemed to consider it mainly as a plaything. Two courses were open: to bend the energies of the institution toward the investigation of the natural history and archeology of Wisconsin, or to some special line of study, and let the exhibits go on as they had in the past; or to develop the museum as a popular educational institution.

Considering the source of the income, it was clear that the latter course was the only honest one to pursue.

The museum ranked in size of exhibit the sixth largest on the continent and anything short of a considerable educational influence in the community was to be considered unworthy.

This object it has sought to accomplish by making the pursuit of knowledge interesting and pleasurable; by the kind, quality, and manner of arrangement of the exhibits and the labels that accompany them; by doing a considerable amount for the schools by lectures to the children and to the teachers, and by the loan of specimens for class-room use. It was determined that the exhibits should be made for some definite object—should have a meaning—should lead to some specific conception. The mere exhibition of a multitude of objects is not necessarily educational to the public, it may be simply confusing, and the specimens might better be placed in storage in the study-rooms where they can be consulted by specialists.

We believe it important to call attention to and illustrate principles and laws, and so have exhibits showing protective coloration and form, mimicry, individual variation, evolution by environment, evolution by artificial selection, etc., in order to give the ordinary visitor some conception of what are the problems and interests of natural history.

Not believing that the museum should be a sponge, deriving benefit from the work of others and giving nothing in return, we do a certain amount of field work and of investigation and publication (though as yet we have no official medium for the latter), which more or less balances our accounts with the scientific world and places our small staff on the professional footing, necessary to its doing good work in the exhibition halls and establishing a fair reputation for the institution abroad.

Our aim with the public is first to attract, then to interest and instruct them in such an unobtrusive, but effective manner, that they are unaware of the lessons given, but are pleased with the new knowledge gained.

Observation confirms our supposition that the public enjoys instruction given in this manner, and we are more than ever convinced that a museum supported by the public should be administered very particularly for the instruction and edification of the public at large, rather than for a restricted division of it.

The Chair.—"We have all been very much interested in the remarks of the gentlemen who have opened the discussion of the evening. There remains before the time for adjournment full opportunity for discussion of the views which have been presented."

F. A. Lucas.—"Mr. President and members of the Association; I think the papers tonight show that much depends upon the point of view in this matter. Dr. Dorsey's paper is conceived from the standpoint of an ethnologist. Ethnological specimens for the most part have no intrinsic value in themselves, but their value consists in what they represent. In the case of the zoölogist the preservation of material is very important. There are cases in which it must be preserved. I have seen times when a wretched old alcoholic specimen was worth more to me in my studies than the best bird of Paradise that could be secured for the museum. The old specimen showed something which was not shown by any other specimen. There is danger in throwing away specimens which are apparently of no value. Not long ago I had a number of specimens consisting of fragments of the hip bones of various species of birds. The assemblage consisted of material of the sort spoken of by preparators as 'bric-à-brac.' I threw a number of these things away, because they represented a very common species. Two weeks afterwards I found that I wanted the very material which I had discarded. I required, in order to settle a question in anatomy, a number of specimens of the pelvis of this species, in order to ascertain what variability might exist in the number of the vertebrae of the sacrum, and was in trouble, just because I had discarded the material which I thought too poor to preserve. The paper read by Dr. Gilman illustrates matters from the point of view of the artist. Begging Dr. Gilman's pardon, I wish to say that I think the visitor nowadays demands something more when visiting an art gallery than to get the artist's standpoint. It seems to me that intelligent men wish to see how the standpoint of the modern artist has been reached, for the standard of modern artists has changed, and is vastly different today from what it was ten years ago. The man who first with a piece of flint traced on the walls of his cave the outline of a mammoth was an artist. He gave his impression of what he saw, and I have no doubt aroused as much enthusiasm among his fellow cave-dwellers as any modern artist does today among his admirers. It is of great interest to me, and I doubt not it is to others, to learn something about the evolution of art, to trace its progress from the early scratched sketches on the walls of caves to the content of our modern art galleries, and I think the intelligent visitor to an art gallery has a right to ask that he be taught something in reference to the history of the development of art, and I do not see that an effort to do this would necessarily interfere with the function of an art gallery which has been said to be the inculcation of truth as to the beautiful. To me the average old master is not beautiful, and I may make the same remark in regard to the average Whistler. We have a painting by Whistler in our museum. So far as I am aware, there are only two people in Brooklyn who admire that Whistler and really like it.

"But I have seen multitudes of people standing with evident admiration before pictures which are not approved as representing high art by that class of people who have constituted themselves art critics. The majority of men, I have sometimes congratulated myself upon thinking, have come down to my standpoint.

"What we laymen in the matter of art would like to know is something about the characteristics of the various schools, and I think an art museum is called upon not only to teach what is beautiful, but to go a step further, and to educate the visitor in reference to the historical development of the various schools of art."

R. C. Hall.—"I feel impelled to give expression to a few thoughts which have come to me as I have listened to the reading of the papers which have been presented. It is an inspiration to me to come out of the world of business and come in contact with the earnest men and women who are here, laboring in the fields of science and of art unselfishly and altruistically. I am set down in the list of your membership as president of the Pittsburgh Stock Exchange. I wish to bring to you from the world of business where we are struggling, making or losing money, the thought that you are yourselves an inspiration to us. Silently, quietly, in well-chosen fields, you are doing a greater and broader and more lasting work than any of us who are contending in the marts of trade. I wish to bring to you this message, to express to you the joy and delight which some of us feel in your work, and personally to thank you for the pleasure you have given me."

Dr. George A. Dorsey.—"I trust Mr. Lucas did not misunderstand me. I do not think that I would throw the things, of which I have spoken, out of the window; though I think many of them should be treated in that way. That has been our policy in Chicago. During the past ten or twelve years we have gotten rid of enough to fill an ordinary museum. We have given away things, which were otherwise difficult to dispose of,—material, which we cannot use in our scheme of exhibition. I presume many people would not have followed our policy of giving away material, but would have hung on to it in the hope of its proving to be useful some day. I think, however, the idea of holding on to such material is injudicious and even wrong."

Dr. W. J. Holland.—"I recall a conversation I had a few years ago with Sir Edward Maunde Thompson, who is at the head of the British Museum. We were speaking about the difficulty, which exists in museums, of making a wise selection of objects, and he said to me: 'Our policy here is of necessity to choose a few representative things which teach a truth, and retain them. We frequently have trouble in finding out how graciously to decline things which are offered to us. If we were to accept everything which is tendered to the Trustees of the British Museum, we would have finally to roof over London in order to find storage room.' It seems to me that the way to reach the great aim of a museum is by wise and judicious selection. There are inevitable limitations to available space in every museum, no matter how large its resources. Take as an illustration the matter of ethnological collections, with which our friend, Dr. Dorsey, is so thoroughly familiar. I recently stated to the Chairman of the Committee of the Trustees of the Carnegie Institute, which has charge of the museum, that I did not think it was an exaggeration to say that during the brief existence of this museum we have already had enough collections of stone implements offered us for sale, or as donations, to have paved Forbes Avenue in front of this building to the Allegheny Court-house. Not long ago I received a photograph from a diligent collector. It represented a pyramid of flints, arrow-heads, and stones, bearing evidence of having been used by men, beside which the collector was standing. The heap was higher than his head. He offered to sell this collection for a large sum of money. What is the possible object in accumulating material in this way? I would much rather have the Spang collection of stone implements, with its two or three thousand specimens correctly labelled, representing a judicious selection out of fifty or sixty thousand specimens, than anything else that I can think of in that line. The aim of a museum should be wisely and judiciously to select the things which illustrate the truths we desire to teach."

J. E. Talmage.—" I have been intensely interested in the papers presented, and the discussion which has been carried on. We of necessity look at this matter from different points of view. While I must see with my own eyes, I would like also to understand what others see. The specialist and the master may see and point out that which to the ordinary man is not visible. A great landscape artist exhibited a canvas to a friend informing him that the title of the picture was 'A Familiar Scene.' The friend said, 'I admire the picture very much; the scene is familiar. I have wandered along those trees and along that road many times, and I cannot find anything which has not actually a place there; and yet in this, as in every one of your pictures, I see something which I cannot see in the original,' and the master replied, 'Very likely; do you not wish that you could?' The function of a museum to a certain extent is to show to the common mind the things which are invisible without an interpreter. The interpretation of nature is an end to be aimed at in our work in museums."

Dr. W. P. Wilson.—" The work of the Philadelphia Museums is principally educational. Our ideas have crystallized along that line. While I personally can appreciate the artistic in any museum and the importance of investigation and original research, the museum with which I am connected had its origin in a peculiar way; it was started for economic purposes, with a view to aiding merchants and manufacturers in their enterprises. It is supported by the city and the state, and receiving support in this way, we have felt that it was incumbent upon us to return the value of the money given to us by carrying on educational work, and this we are doing. I shall have an opportunity perhaps at a later time to tell you more in detail about the manner in which we are carrying on our work. The aim of the Philadelphia Museums in short is educational."

The Association adjourned to meet on Wednesday, June 5, at 9:30 A. M.

SESSION OF WEDNESDAY, JUNE 5

Morning

The Association convened at 9:30 A. M. and was called to order by President Bumpus. Preliminary to taking up the order of the day a report from the local Committee of Arrangements, stating what invitations had been given to the Society, was made by Dr. W. J. Holland, the Chairman. In view of all the circumstances it was decided that the invitation to visit the Homestead Steel Works, the factory of the Pittsburgh Plate Glass Company at Creighton, Pa., and to devote the evening of the day to a visit to the Allegheny Observatory be declined, cordial thanks being tendered to the representatives of these great industries and to the Trustees of the Western University of Pennsylvania for their proffered hospitality.

The report of the treasurer was submitted (see p. 23).

Upon motion the report was referred to an Auditing Committee, consisting of Messrs. O. C. Farrington, H. L. Ward, and T. L. Comparette.

The first subject presented for discussion, upon which opening remarks were made by Mr. W. M. R. French, of the Art Institute of Chicago, was

THE PRESENT JURY SYSTEM IN CONNECTION WITH EXHIBITIONS OF CONTEMPORARY ART

" It has long been customary for associations of artists to commit the selection of works for public exhibition to a jury chosen from their own number. The art museums which hold passing exhibitions have followed the same plan, sometimes appointing their own juries, and sometimes asking the exhibitors to elect jurymen from their own number. The latter, I believe, is the method employed in the present exhibition here in the Carnegie Institute, and I may say, in passing, that it appears to me the most important international exhibition I have seen in America, except in the great expositions. This jury system has worked very well, so far as I know. I have never seen a jury of artists who did not make every effort to render just decisions, and who did not welcome good pictures from any quarter. I once made the experiment on a small scale of submitting the pictures to two juries, which were in session at the same time. They examined two hundred and sixty-four paintings and made opposite decisions in only nine cases. This goes to show that juries, at least at a given time and place, work upon consistent principles.

"There has grown up a custom, however, among museum men of hunting up pictures of extraordinary merit, and inviting the artists to exhibit them without submission to the jury. Soon the most important artists become accustomed to being so invited and refuse to submit their works to the jury, and the lesser men, as they are able, follow their example. Under these circumstances the chief service of the jury is to pass upon the work of the younger and less known men. But this is an important service, because opportunity is thus given for unknown ability to assert itself.

"Lately some of the musem men have declared their intention of abandoning the jury system entirely, and of making their own selection of works to be exhibited, presumably through the director personally, or by other duly accredited agents. This has a strong tendency to break up the jury system, for it may become difficult for one institution to maintain a system, which others have discarded, and thus the subject becomes a suitable one for discussion."

Mr. French was followed by Dr. Charles M. Kurtz, director of the Albright Art Gallery, Buffalo Society of Fine Arts, who read a paper upon the theme,

IN THE ORGANIZATION OF AN EXHIBITION OF CONTEMPORARY ART ARE THE BEST RESULTS OBTAINABLE THROUGH JURIES OF SELECTION COMPOSED OF ARTISTS, OR THROUGH THE INVITATION OF SPECIFIC WORKS CAREFULLY CHOSEN BY A COMPETENT COMMITTEE OF LAYMEN?

The museum, it seems to me, might be defined as an institution for the assemblage, classification, and preservation of objects valuable from standpoints of information and inspiration.

Assuming that the principal function of the museum is education, the problem before the museum director is to discover the means by which his museum may be made most efficient in this direction.

In the first place, the judicious director will make the most of the collections confided to him, installing them in such manner as best may show them and their purposes or relationships, and also as best may arouse the interest of visitors and stimulate questioning and individual study.

In so far as he can control the increase of the collections of his museum, he should strive to avoid adding anything not exemplifying a high standard of worthiness. It is much easier to acquire works of little value than it is to get rid of them when you need for better works the space they occupy. Especially is this true when inferior works are accepted as gifts from influential but unenlightened persons.

It does not take long to organize a large collection in almost any line, but it is quite another matter to organize a fine one, and I believe that the museum, in its permanent collections—no matter what its particular field in the department of art or science—should aim to secure such works or specimens as will be valuable and delightful as well to the aesthetic connoisseur or the educated scientist, as to the ordinary casual visitor. And I believe such high-grade collections will have the greater influence even upon the unenlightened.

A museum should be considered as a treasury—and as such should contain only treasures. By that I do not mean necessarily rarities or objects only procurable at great expenditure of time, or effort, or money, but objects of real significance; of educational value, representing the best—the most nearly perfect of their kind.

The art museum, as distinguished from all other museums, should, as its special function, work for the cultivation of art appreciation and the furtherance of art knowledge among the people. It is particularly essential, therefore, that it should present only what is best, because aesthetic taste may be perverted if brought into contact with examples of depraved art, just as literary taste may be demoralized by the constant reading of a low order of writing—or good manners may be depreciated by association with persons of an inferior order.

Now, few of the art museums of the smaller cities grow with such rapidity that their permanent collections afford constant attraction to the citizens of the place in which they are located; so, to secure the constant attention and interested support of these citizens, the attraction of the permanent collection must be supplemented by frequent special exhibitions. And the more excellent these exhibitions are—the larger the recognition accorded them by persons of known connoisseurship—the stronger will be their attraction and the greater their influence, while the institution itself will gain in reputation, influence, and popular support.

It is apparent, then, that in quality these special exhibitions must exemplify a high standard of merit; beyond this, however, another matter must be considered: the exhibitions must show variety—novelty. They must stimulate discussion, comparisons, criticism. To secure the very best results they should, in course of time, represent all the various schools of artistic expression, as far as may be possible, but always by worthy productions.

As a consequence, those who visit the museum often will become broadened in their knowledge, and by comparing the various schools with each other and with nature will become wisely critical, will develop appreciation of beauty in art—and in nature as well—will come to demand beauty, where at present they may be insensible of its absence, and will become centers of influence—of the infection of enthusiasm—and earnest museum supporters.

And that is what we want!

The real success of a museum is measured not so much by its extent or the value of its collections as by the esteem in which it is held by those who "know," by the influence which it wields, by the use that is made of it, and by the support which it can command.

Now, how can we best secure a high standard of merit in our transient exhibitions?

I believe that the only way is to make sure that no work which is not of a high degree of merit shall be admitted to them.

"But then," interposes someone, "how will you encourage the young artist—not yet 'arrived'—who is striving to win recognition through the public exhibition of his work?"

It seems to me that the museum only should be interested in the young artist when he is able to produce something that is worthy. Meanwhile he can make his way, more slowly perhaps, through the periodical exhibitions of the dozens of art societies of various kinds. The museum should be valuable to him in showing such work as may arouse in him a spirit of emulation, and which may offer him standards of merit with which to compare and measure his own productions. The museum is not designed to exploit the individual, but to educate and inspire all the people.

Now, if the director of the art museum "knows" art—the real principles of art—if he knows what art is and what it is for, and if he has taste—and he ought to have both knowledge and taste and to be broad-minded—catholic—in addition, to be fitted for his position—he should be able to organize a collection of art works in which every example should represent high artistic quality. Should he hesitate to assume this responsibility, a small committee of collectors of paintings—so long as they are not men wedded only to a single phase of artistic expression—might be depended upon for the organization of a collection of merit. In fact, in the art exhibitions held monthly during the winter season by various prominent New York clubs—exhibitions almost invariably organized by laymen—the average of merit almost always is far higher than that in exhibitions organized exclusively by artists. Indeed, I have yet to see the first collection of paintings formed by a committee composed exclusively of artists, either in this country or in Europe, having anything like an evenly high standard of merit in the works selected.

It is not difficult, I think, to explain why this is so.

Every artist of character develops and follows a certain individual method of expression—of technique—presumably because that, to him, seems the best method; and he likewise usually follows an equally individual choice of subject and character of interpretation. As a general proposition, he finds little to admire or with which to sympathize in the work of a man who has different ideals or who follows different methods. If he is an impressionist, he usually has little patience with the artist who paints in the manner of the earlier schools, the literalist in particular. On the other hand, the old-time painter is apt to find nothing true or admirable in impressionism.

Now, a fairly representative exhibition of the art of any country should include examples of the various schools or methods of expression, and if such an exhibition should be formed through artist-jury-action, manifestly the jury should include in its personnel representation of all the schools. But men who have little or no sympathy with each other cannot, with the best results, work together, and therefore the outcome almost invariably will be a series of compromises in which the art of every school represented will be apt to suffer.

A man who has devoted a large portion of his life to the study of art in general usually is far better qualified to serve as a juryman on art than the painter who has devoted himself to the study, exclusively or mainly, of a particular phase of artistic expression.

Then, also, comes in the personal element which interferes with ideal results from the artist-jury action. A member of an artist-jury will rarely vote against the production of an intimate friend, or a pupil, or the, perhaps exceptional, poor picture of the painter of great reputation. And often he will refrain from voting against the unworthy work of a fellow artist, for the reason that he may feel that such action may be greatly to the disadvantage of a struggling painter, who needs every possible opportunity to effect sales; or, perhaps, for the less commendable reason, that this fellow artist may be a member of the jury next year, when his own work is to be considered for admission.

No artist who has sold a picture will ask the purchaser to allow it to be submitted for jury consideration. Its possible rejection would at once depreciate its value in the eyes of its possessor, unless he should prove to be an amateur of exceptional knowledge and character, and it would result, ordinarily, in reflecting discredit upon the artist. So, where there is an artist-jury, all the works considered which are not in the possession of the artists must be voted upon *sub rosa,* the members of the jury simply recalling them to memory as well as possible, and, if their decision be favorable, inviting both artist and owner to contribute them for exhibition.

Usually, institutions employing the artist-jury system endeavor to secure for members of such juries artists of the greatest distinction. They know very well that while nearly all artists are willing to accept the invitation to become jurymen, those upon whom professional demands are the most exacting rarely will serve, and therefore the responsible duty usually is performed by the men who are least prominent and to whom the honor and advantage of the service appeal most strongly. The printed announcement, however, of the personnel of the jury never fails to include "the big names."

To an institution of limited means, the artist-jury system is apt to prove a burdensome as well as unnecessary expense. Even though foreign jurors are not brought over to this country from Europe with all their expenses paid (to add to the prestige of the institution), and though none of the jurymen receive remuneration for their services, the rental of the places of meeting in the various cities where division-juries assemble, the lunches, carriage hire, refreshments, clerical assistance, et cetera, contribute to a very considerable total, and use funds that far better might be employed to secure better results in the extension of time, effort, and expenditure on the part of an individual organizer.

Another matter to be considered is the loss of time, effort, and money, and the possible disappointment of the hundreds of artists who are led, by invitation, to submit their works for the consideration of jurymen. If an artist is not invited to contribute he goes to no fruitless expense; if he is invited and fails to qualify, he must pay the cost of sending his work to the place of jury-meeting and of having it returned to him, and must be subjected to the humiliation of having his production discredited as unworthy.

Certain artists of well-established reputation refuse to submit their productions for the consideration of artist-jurymen under any circumstances, and, if their works are desired, they must be secured by invitation. And, therefore, the "artist-jury" system cannot be applied universally, in any event. To secure a creditable exhibition, a large part of the works must be invited, and experience shows that these always constitute the better part of the collection.

Mr. John W. Beatty, Director of the Department of Fine Arts of the Carnegie Institute, said:

" Director French has courteously expressed his profound respect for art juries, and with his feeling I have the keenest sympathy. My relation to the juries which have met at the Carnegie Institute during the past eleven years has been very intimate. I have not had, in a single instance, the feeling that the jury in its action was insincere or dishonest, nor has there been evidenced the slightest desire to do injustice to anyone; on the contrary, there has been manifested always an earnest desire to render justice to all, and especially to seek out and recognize the work of the unknown young painter. The distinguished painters whom it has been our pleasure and honor to welcome to Pittsburgh as jurors have discharged their delicate tasks with singleness of purpose and integrity. I think objection to the jury system cannot lie either on the ground of dishonesty or inability, *providing the method of creating the jury secures the services of the ablest men of the profession.* There lies at the basis of the suggestion as presented here today the question, whose judgment is to be final in matters of art? Is it to be the judgment of the able painter, sculptor, or architect, who has devoted his life to the study of art, or is the work of art to be submitted to one or more amateurs? Doubtless there are laymen who possess more knowledge of art than do many artists. Indeed, I know laymen whose opinions I would much rather have than the opinions of some artists, but this means nothing; it is not the question; the real question is: Is not the exceptional artist, the master who has devoted many years to the study of art as a profession, an abler critic than the collector or amateur, who has devoted his life to the pursuit of business or some other profession, and but a limited time, a moment or an hour now and then, to the study of art? Whistler has laid down a principle which will, I think, hold good for all time, namely, that the man who passes judgment upon any science must be one who has devoted his life to the study of that science. Our scientific friends here today will admit this, I think, as a fundamental principle. The layman does not presume to pass judgment upon profound scientific questions. The reason for this is self-evident, and applies to the science of aesthetics; it is a truism the world over; and it is not soberly disputed in the higher circles of science or art. You must place over against the amateur, who is usually the exceptional man, the able, or exceptional, painter. The reason is simple: Art is based upon nature, and by constant study of nature the artist intimately knows the beautiful qualities inherent in nature—the elusive and delicate colors, the graceful and forceful lines, and the ever-changing effects. He is therefore quick to apprehend and understand these qualities in the work of another. It is for this reason his judgment is sought by the amateur and collector. It is thoughtless to say, that because the painter has developed an individual manner, his view of art is narrow. The strong painter is as broad as the strong man in any other profession. He has studied art as 'broadly' and a thousand times more intimately and intensely than has the 'broad' amateur. His knowledge is not limited to technical qualities. He knows the larger phases of art also. The works of the masters of all times have been his constant study. I believe it to be a simple fact that no important private collection has ever been formed without the counsel of one or more able artists. There may be exceptions to this rule, but no one conversant with the facts will deny the rule. When the Boston Museum desired to establish the authenticity of a Velasquez, it did not invite a committee of business men or amateurs to decide this vital question, but a committee of the most eminent painters was asked to go to Boston to pass judgment upon the picture. This was an exceptional case, and it called for the highest and most critical judgment. It is the exceptional case, or the work by a new man, which always requires this kind of judgment. Anyone may go with the tide and buy paintings by men of established reputations; any collector may do this with reasonable safety.

"It may be of interest to you to know how the Pittsburgh jury is created. A ballot is issued to each of the contributors and he votes for ten members. During ten years the chairman of the Fine Arts Committee served as president of the jury; this year the director of fine arts served in this capacity. Thus, excepting the presiding officer, the jury is the choice of the painters. As the president does not vote except in case of a tie, I feel free to speak frankly of the merits of the system. If there be any objection to the present plan it is rather on the ground of the work being done, of necessity, with great haste. In the examination of thousands of paintings the average time given to each work is about thirty seconds; I do not mean that only so limited a time is given to each of the works presented, but that this is the average time given. The great majority of works justify but little consideration, and the conditions seem to demand haste, because four or five days are as many as the average busy man or woman can give gratuitously to public jury service. It is only fair to say, however, that rarely does a picture possessing real merit pass the keen eyes of ten experts, trained by long experience, without a challenge from one or more; when thus arrested, the picture always receives the most careful and conscientious consideration. Nevertheless, it is possible, and even probable, that a jury in the course of several days' rapid work will make mistakes. Members of juries realize this quite as well as does the critic, and they would be the last to claim infallibility. If any plan can be devised which will permit more deliberation, at least this objection to the jury plan will be overcome.

"In the application of the jury system we meet with another difficulty. Many painters refuse to submit their pictures to the judgment of a jury; some of them maintain that their position is so well established, their works so well known, and their standing is so well established before the public that they ought not to be asked to submit their pictures to the judgment of a jury. This is perhaps a fair enough position for a man to take who has become very eminent, and I perhaps might see no objection in a compromise which would provide for a change. We to some extent have followed the plan of inviting some few very eminent painters to exhibit certain of their works. Eminent writers are not asked every year to submit their works to a committee of their peers. W. D. Howells would not be asked to submit his work to be passed upon by a jury of writers, and so I think that a man of the eminence of Mr. John Sargent should not be asked to submit his pictures to the judgment of a jury of fellow artists; his position is already firmly established. But for the large number of men each year entering the field the jury system is the most perfect, which has as yet been devised, and in my judgment the only system, which can be employed. In selecting a jury I always wish three or four of the ablest men to be upon it. In our case we have generally succeeded in having at least two or three very able men upon the jury. In conclusion I wish to say that upon the whole the jury system is the safest and best plan which we can adopt in judging works of art."

Benjamin Ives Gilman.—"The subject is one about which I know but little and therefore should say but little. The idea, however, has occurred to me that the question is in reality whether we can best trust artists as critics, in selecting a jury, or a select body of men chosen from the public for whom the artist works; and I sympathize rather strongly with the idea presented by Dr. Kurtz when he states that the artist is not in general a good critic. I lean, therefore, rather toward a jury composed of connoisseurs. At the same time it seems to me that in America we scarcely have that class in existence yet, and therefore it may be possible that a jury composed of artists is the only jury which is possible. I think the difficulty which Mr. Beatty has brought out is a very genuine one and shows that really we ought not to submit the works of an artist to his brethren; they ought to be submitted to the great final judge of all—the general public; that is the only court from whose judgment there is no appeal—the judgment of the civilized world. What makes Shakespeare a great poet, and Beethoven a great musician is not the judgment of a small selected jury of poets or musicians, but the judgment of the great world of men. What makes a physician eminent in the world is not necessarily the judgment of his fellow practitioners, but the judgment of the clientele for whom he labors.

The reason the jury system is not better is that those of us who are not practitioners do not take the trouble to inform ourselves sufficiently to qualify ourselves to be good judges."

Dr. W. J. Holland.—" We have present with us this morning a gentleman who for ten years has served as chairman of the jury of award in the Department of Fine Arts in the Carnegie Institute—Mr. John Caldwell. I think we would all like to hear an expression of opinion from him."

Mr. John Caldwell.—" I am in the unfortunate position of one of the gentlemen who spoke here yesterday, who said that he could not be addressed as ' Doctor ' or ' Professor '; I am simply John Caldwell. Very much to my surprise I had the honor a few years ago of being chosen as chairman of the Committee of Fine Arts of the Carnegie Institute; I say ' to my surprise ' because there are two subjects which I have been studying all my life and about which I have been unable to learn much, the one is John Caldwell himself, the other is art. I cannot find any person who can give a satisfactory definition of art. The longer I live, the more I reflect, the more I realize that Mr. Gilman is mistaken. All work which is worthy of being called art is not conceived or done for the purpose of pleasing the general public. I hold to the principle that whatever is popular in art is absolutely bad. According to the idea advanced by Dr. Gilman we ought to cater to the general public. If that were done the whole Institute would not be able to hold the rubbish which would be foisted upon us. Mr. French mentioned the case of an artist who came to see the exhibition from which his picture had been thrown out. As chairman of the Committee on the Fine Arts of the Institute I some years ago received a letter from a gentleman in the West who wrote inquiring what kind of pictures we desired, stating he had a great many photographs and newspaper clippings and that he had an artist friend who was willing to paint any kind of a picture that might be wanted. The attitude of this man represents to an extent the attitude of the general public.

" There are no people for whom I have more respect and love than artists. The jury here last year was not composed of ten men; it included a woman, Miss Cecilia Beaux. The ten members of the jury are, however, controlled by less than five. Time and time again I have seen the jury coming down to the standpoint of the average buyer of pictures before venturing to express an opinion.

That is not criticism; far from it. An artist sees a tolerably good picture painted by a friend of his who, he realizes, may possibly be upon the jury next year and who may pass upon his own pictures in time to come. He decides in favor of the picture of his friend. Artists are human and are influenced by considerations of this kind, but this is entirely opposite to the true spirit of high art. No great work of art anywhere was ever created merely for the purpose of obtaining money for it. No man can keep one eye on the canvas and another on the pocketbook of the public and produce a great work of art.

"To come down to practical matters, I am thoroughly convinced after ten years of experience that the jury system is a failure, not because we elect ten artists, but because the composition of the jury is not changed sufficiently from year to year. Painters refuse to submit their work to the judgment of these ten men. Mr. Beatty is right in saying that there are men who ought not to be required to submit their work to the judgment of juries, and I agree with Mr. Kurtz that there are many laymen who are quite capable of deciding upon other than mere technical grounds whether a picture is or is not a fine picture and possesses an educative value for the public. Personally I would rather have twenty really splendid works in this gallery of art than three or four hundred fair to medium pictures. Rightly chosen, the smaller number would have more educational value for the public.

"The suggestion has been made to me time and again that we should mingle with the jury of artists a few connoisseurs who, without regard to technique, are appealed to at once by a picture as having good value. Again, permit me to say that our jury of ten is too large; ten are quite too many. A jury of five men would be preferable to a jury of ten. Whether these five men should consist of three painters and two art connoisseurs is a question to be considered.

"I thank you, Mr. President and gentlemen, for having allowed a man who knows nothing of the subject to speak as long as he has."

Dr. George A. Dorsey.—"I find myself in accord with some of the remarks made, not with all of them. I wish more particularly to take issue with Mr. Gilman's statement that we must depend in the end upon the judgment of the civilized world. The judgment of the civilized world is in reality the judgment of a handful of men whose opinions are accepted by the civilized world."

Dr. Gilman.—" There is of course point in what has been said as to the fact that the judgment of the civilized world is originally the judgment of a discerning few. We all know that the general public does not exercise the highest degree of taste in many matters. Take the ordinary furnishings of a house: The general public purchases stuff which is atrocious to men of taste; cuspidors in the form of plug hats, butter dishes made in the shape of flat-irons, and a thousand other equally anomalous things may be found for sale in establishments where household furnishings are supplied. Such things would not be provided unless the public encouraged their production. A man who goes out to provide an outfit for a house will be confronted by all sorts of bizarre, taste-offending things, startling wall papers, and what-not. The general public buys infernal things, we all admit. A man of taste on such an errand as I have described must satisfy himself by picking out those things which are least offensive and taking them home. When I said that the judgment of the civilized world may be relied upon in the end, I meant only to say that the final judgment of humanity in general is unimpeachable. That final judgment is of course often foretold. A jury of cultivated men may be able to tell you in advance what the judgment of posterity will be, but that judgment is, as I have maintained, a judgment pronounced by laymen. What constitutes Beethoven a great composer? Not the passing judgment of his contemporaries, though many of his contemporaries realized his greatness, but it is the judgment of mankind, spoken not by a select few, but by the vast majority of men who have attended to the production of his works and who agree in assigning him a permanent place among musical composers. His accepted greatness is the result of the verdict passed upon him and his works by mankind."

John W. Beatty.—" I arise again to emphasize the point that expert judgment is dependent upon knowledge and knowledge is dependent upon profound study. I think we ought not to attach more importance to this novel, and to me amazing, proposition than it deserves—the proposition to relegate to the rear the masters of art, the men who are today creating works which will live long after the critic of art is forgotten, and to place in their stead the amateur, the dilettante, the one who has neither the knowledge nor the ability to produce a work of art. It is folly to assume that one who has studied art theoretically can know the subject as thoroughly as the one of equal ability who has studied practically as well as theoretically. Philip Gilbert Hamerton touches this point when he says: ‘Our only chance of safety lies in being critical with thoroughness of knowledge. . . . The true critic is a person who, having lived within the cliques and learned their language, can get outside of them by an effort of the will, and see them at the same distance from himself. *He knows them from within and he knows them from without both kinds of knowledge being absolutely indispensable to justice.*’

“In considering this subject, we must keep in mind the strong men, the masters of art. Only a few in any profession are masters. Several years ago at a dinner in Allegheny City, this question was under discussion. The two foreign members of our international jury of that year were present and took part in the conversation. Twenty years before they had been fellow students in Paris. They estimated of the two thousand students who were studying in Paris when they were there, probably only twenty had achieved distinction. A gentleman present remarked that this was a low percentage—only one per cent. A successful and eminent business man, who was of the company, was asked if he knew how many men in a hundred succeed in business. He replied that only one per cent. of those who enter business succeed. The previous year I visited the Salon exhibition, accompanied by two able painters. We decided to check in the catalogue the works that they agreed were unusually strong and worthy of special consideration. There were more than two thousand paintings in the exhibition. Upon examining the catalogue, it was found they had checked nineteen—one per cent.—again. If one considers the entire profession, he finds that the average quality of the work produced is not high. It is not high, as I have remarked, in any profession. Is it a satisfactory answer to the question presented here today to say that many painters, that even the great majority of painters, are weak and poor judges of the works of art? The percentage of strong men in the professions of science, of medicine, business, if you please, is very small. A small number of men determine standards and establish reputations. As Dr. Dorsey has just said: ‘The judgment of the world is in reality the judgment of a handful of men whose opinions are accepted by the civilized world.’ I could give you many illustrations of this fact. The history of art is full of them. Let me give you one. There is an Italian painter living today, Antonio Mancini, who is not popularly known; as far as the public is concerned he may be said to be unknown. I know of only one painting by him in America. Eighteen months ago he exhibited a powerful picture in the Carnegie Institute annual exhibition. Some years since John S. Sargent, recognizing the great ability of Mancini, purchased a number of his works. Mr. Sargent has no hesitation in saying that he considers Mancini one of the very ablest painters of the time. He owns four or five works by Mancini. H. W. Mesdag, the well-known Dutch painter, also discovered the beauty and strength of Mancini's art, and purchased five or six of his strong works, among them 'The Invalid,' a modern masterpiece of rare charm and beauty. Nor do these two painters stand alone in their appreciation of this modern painter; many other artists entertain the same high opinion. Mancini simply has not 'arrived,' so far as the public, the collector, and the dealer are concerned. His reputation is in the course of making, and is going through the usual stages of development. The thought I want to impress is, that, long before the public or the amateur recognizes the master, a few of his fellow artists understand and recognize him. Thomson has recorded a number of instances. Corot, who labored long and patiently before public recognition came, was early understood by a few of his fellow painters. Twenty years before he achieved fame, Constant Dutilleux, himself a painter of limited means, purchased a small Corot landscape at great personal sacrifice, and in the same year Delacroix said of the gentle laborer, 'He is a painter—a true painter.' The first ray of light crossed Millet's dreary pathway when he was told that Diaz, with whom he was then unacquainted, greatly admired 'Le Léçon d'Equitation'; and many years before this great master was known even to the art dealers of Paris, Rousseau bought one of his works when he could ill spare a franc from his own meager earnings. In 1866 Daubigny's important moonlight was hung in the Royal Academy, and a young painter named Wills purchased the work. In 1837 Rousseau's 'Avenue de Chataigniers' was rejected by the Salon jury, and Diaz, Dupré, and Delacroix were unceasing in their protestations. Despite these evidences of thorough appreciation by the few who knew, the same author says public or general recognition was often tardy, but, as Henley has said, 'An eye for paint is no more general than an ear for music or a head for mathematics.'

"There is this insurmountable objection to a jury composed of amateurs: The great painters and sculptors of the world will not submit their works to a jury of laymen; of this I feel very certain. The relation existing between the art museum and the artist is interdependent; and the art museum must take into account the party of the second part. We cannot arbitrarily decide for artists what they must do. I would not care to be the one to propose so radical a change, inasmuch as the whole world has for hundreds of years submitted to artists public questions touching art. If the issue were a question of a weak professional jury against a strong amateur jury, there undeniably would be arguments in favor of the amateur jury, but there is no need to have a weak professional jury. It should be our aim to secure the highest professional or expert opinion. The last court of appeal always has been and always will be the trained, able, broad-minded, professional man, and there are proportionately as many able men in the profession of art as in any other profession or calling. That there have been weak juries within the history of art, or that artists are not less fallible than other men, does not change this abiding fact which is based upon the experience of men in every field of human endeavor. Under our plan, we bring ten eminent painters here each year, chosen by votes of artists residing in America and Europe; among these, four or five may have unusual influence; I believe, however, that each votes honestly and is not unduly influenced by the few whose ability he may justly recognize. I think the jury system is the safest method of passing judgment upon works of art, because of the intimate and profound knowledge of the painter."

John Caldwell.—"Mr. Beatty and myself have repeatedly discussed this question for hours at a time. Mr. Beatty gives himself away as an artist; he is a distinguished artist and takes the narrow view of an artist. The artist knows what is correct in drawing and correct in color; but correctness in drawing and in color does not make a great work of art. The artist looks at the technical side of the work before him and passes upon it favorably; the public does not regard technique. The layman, without reference to technical matters, decides upon the good or the bad taste displayed in the picture, upon the larger qualities which the picture possesses or which the picture lacks, without reference to the means of a technical kind which the painter has employed to produce results."

Charles M. Kurtz.—"The mistake made by Mr. Beatty is this, that he does not give credit enough to the man who devotes his whole lifetime to the study of art in all its phases. He compares the critic who has thus studied with the painter who has devoted himself to a single phase of expression. A man who is thoroughly educated, who is catholic in his judgments, who has studied proportions, has made the works of artists everywhere belonging to all schools his special study, will display a judgment far superior to that of the man who has devoted his whole time to a single line of expression, and almost every painter devotes his efforts to study in but one direction. His success depends upon his doing this, he must be distinctive, must be individual, must have his own method of interpreting nature, and being thus devoted to the pursuit of one particular style in art, his judgment is apt to be far less catholic than that of a man who while not engaged actively as a painter in the pursuit of his profession is nevertheless making art in its broadest sense the object of continual investigation and research."

W. M. R. French.—"I think the opinion of the public is generally fixed in the end by the concurrent opinion of those whom they have learned to respect. There is a very good expression used by Ruskin in regard to Titian: 'There goes around an everlasting murmur proceeding from the consent of all men that he was greater than they.' "

Mr. T. L. Comparette, curator of the numismatic collection, U. S. Mint, Philadelphia, read a paper upon

THE INSTALLATION OF A COLLECTION OF HISTORICAL COINS

I should not be in the least surprised, that, if I could tell the Association how to procure a collection of historical coins and medals, this paper, provided it were brief, would be much more acceptable than anything that I may be able to say on the subject of installing such exhibits. That topic too, as well as several others but remotely connected with the main theme, will be briefly discussed.

The *plan* of exhibiting a collection of coins and medals will naturally be influenced very largely by the *purpose* one expects the collection to serve. To some it may seem absurd to attach to such objects any other than the one most obvious, their historical value, and chiefly their value to the student of political and commercial history. But such a position is not necessarily the correct one in every case; for the Greek coins, and that includes the coinage of many non-Greek communities, may be regarded rather from the point of view of the development of the fine arts, so that while the historical principle still controls, the manner of indicating it in the installation will differ considerably from that employed when the aim is to illustrate political history. And if a museum has through the generosity of some wealthy collector come into possession of a numerically small, but artistically fine collection of ancient and modern coins, it seems to me to be no great mistake to install them with regard to the artistic rather than the political point of view. For such a collection is apt to include but one or two specimens from a given region, and thus the geographical arrangement of them is of but little value to the student, of almost none to the investigator, whose work requires full series, and is most unsatisfactory to the museum authorities. On the other hand all know how well a collection of coins illustrates the historical development of the arts, a statement so true of the ancient Greek coins that a competent authority has called them "the grammar of Greek art." It is therefore easy to group them into classes, in which the artistic excellence and technical skill show the same advancement as the sculpture of corresponding periods. A comparatively small collection so arranged assumes at once a definite educational value.

It must not be forgotten, however, that the truer scope and purpose of coins and medals are much greater and more important. They are among the most trustworthy pledges of history that we possess and many are the pages and chapters of history that have been written from no other documents. And though much has been already done to ascertain what light ancient and mediaeval coins can throw on events and political changes left untouched by the contemporary historian, there yet remains a great deal to be done. For example, the history of ancient commerce is yet to be written. The accounts we now possess are feeble and incomplete, and the subject can only be treated satisfactorily with the aid to be had from ancient coins the frequently changing standards and denominations of which may point out the path of trade; for often we find a half-civilized or minor state adjusting its money to that of a powerful nation with which it has established new or more extensive commercial relations. For such a purpose, the real purpose of a collection of historical coins, a complete, or approximately complete series of each country is indispensable. Such an ambitious program is hardly possible for our American museums at the present time, and it will be many years in all probability before we begin to imitate the example of the British Museum and of the Royal Museum in Berlin in the acquisition of vast numbers of coins and medals of all ages and countries. At the present time there is not the demand for them, and this is largely due to a lack of knowledge of the value and interest they possess, a knowledge which the museum must supply. And it is not alone the man of only general culture whose interest has not been aroused, but the institutions of higher learning have not yet discovered the value of coins and medals in teaching certain subjects, especially history. With us coins are yet in a large measure mere curios, and, so long as that attitude exists, no museum will have the enthusiastic support nor the large means necessary to create a collection sufficiently extended for research work.

In one respect the museums can equip themselves in a short time and at small expense to be of very great service to the community and especially to the schools. The portrait of Alexander appears on the coins of his successors and from that time on, with the exception of the Middle Ages, the coinages of Europe, of portions of Asia, and of Africa preserve the portraits, in varying degrees of faithfulness, of nearly all royal personages and of many other persons of prominence. It is unnecessary to dilate upon the value of a long series of these portrait coins. The high school and college population and the general reader would certainly find them of very great interest.

Such a collection could be quickly made, as it is always easy to procure a good portrait in one or another of the numerous denominations, and, as the portrait is the chief interest, a good specimen of a plentiful issue is at once satisfactory and inexpensive. By avoiding rare and expensive pieces I believe that the whole series of portrait coins can be brought together at an average cost of $1.50 per specimen.

A natural development of such a collection would include the modern portrait medals that present the likenesses of other than royal personages. The modern medal originated in Italy at the middle of the fifteenth century and as a result of the enormous popularity of the new art the personal appearance of the leaders of the Italian Renaissance in all fields of thought and action have been preserved for us by Pisano, Sperandio, Andreas Guazalotti, Marescotti and a large number of other artists, and ofttimes with a portraiture that is inimitable. The medal then served the purpose of the modern photograph, being made by order and at the expense of the subject for distribution among his friends. The result of such use of the medal was a more extended development of it and an artistic excellence in the hands of the best artists of the day that one looks for in vain at the present time. Naturally the number of pieces ordered by the subject was not, with few exceptions, large, so that they are now scarce and in some cases cannot be had at any price; but copies of them are obtainable from the European museums at a small cost. As a rule I deprecate the suggestion of putting copies of coins and medals into our collections; and it is in nearly all cases unnecessary. But where originals are so rare and so exceedingly costly the practice is certainly excusable. At a later date when the practice of striking medals had come into fashion (the earlier specimens just referred to were cast) the number of originals was much greater and can usually be procured at a reasonable cost. I refer to these Italian pieces as a good illustration of what can be done with a collection of portrait coins and medals. To point out the wealth of it by mentioning the long list of distinguished men and women that would be represented is to take too much of our time. For the gallery would be almost complete in good likenesses of the great churchmen, teachers, poets, generals, noted women and even children, and of the kings and queens, of Italy chiefly, from 1430 to 1600.

If there is any value in the suggestion about portrait coins and medals it is of course chiefly for the museum that lacks the means or justification to attempt to build up a great collection of the coinages of the world. And yet the museum that has not entered upon this phase of work, but proposes to do so, will hardly find a better point at which to begin. For no amount of enthusiasm for one's field of interest is apt to overestimate greatly the educative value of a coin and medal room in the museum, where one may go and see the likeness of the person that is figuring prominently in the events about which he is reading or is more seriously studying.

Coming now to the subject of arranging and exhibiting the coins and medals: there are some few things which must of course be carefully regarded, while many features of the plan may be varied according to the extent of the collection and the character of the space that can be devoted to the cases. Considering the collection now from the point of view of scientific numismatics it is perfectly obvious that the arrangement must be geographical and chronological, if it is to have any scientific or educational value. To arrange Greek coins in the alphabetical order of the cities where they were struck is nothing short of absurd; the resulting conglomerate mass presents the single advantage of facilitating the finding of the coins of a particular city in the cases, and that is an advantage without a real value. The alphabetical scheme is actually in use in some places; it was probably copied from the national collection in the mint where I found it employed; a change has been made there.

The main lines to be followed in the arrangement of a collection comprising ancient, mediaeval, and modern coins have been indicated in the scientific manuals of numismatics, beginning with Eckhel's epoch-making work to those of the present time, but on the details of the subject there is an embarrassing silence. Just where a man begins to feel the need of clear guidance there the silence begins. For it is almost useless to point out to a trained museum man that the ancient and modern coinages should be separately installed, that the mediaeval specimens should form still a third division; or that in arranging the collection geographically he should begin at a naturally convenient point and follow up with the other countries in the order of contiguity, yet it is with information on such perfectly obvious matters that the manuals usually stop. But how to arrange the coins of Italy or Germany with their numerous states of every description is the much more difficult problem, and of this one seldom finds a solution suggested.

A single principle, I think, if carefully followed, will simplify the difficulty presented by those states, which, like Italy and Germany, have emerged from a geographical expression into a united kingdom or empire. The coins should be so arranged in the case that the state whence sprang the royal or imperial house of the united country is last, and thus you have a natural transition to the coinage of the united realm. For instance, in dealing with the modern Italian coinages I begin with Sicily, then pass to Naples, to Rome, Florence, Bologna, the minor states of the east coast, then across the northern end with Parma, to Genoa, placing last the coins of Savoy and Sardinia, which are naturally followed by the coinage of the kingdom of Italy. Germany of course presents the most difficult problem, but by the same principle the coins of Prussia would be placed last in the case.

It is difficult to avoid the feeling that I am carrying owls to Athens when discussing such a subject before trained museum men, but there is also the possibility that the careful study of minute details has brought up problems and with them some sort of a solution that may be approved by you; and still better, it is probable that some of you will be moved to impart your riper knowledge of the subject. A word about the cases and some methods of exhibiting coins and medals in them! The cases in the mint are a combination of the horizontal and upright, both sloping a little, at once to aid the eye of the observer and to give the upright case sufficient slope to keep the coins in place without the aid of fastenings, or of projecting shelves. Instead of a clip or other device to hold the pieces on the tray we have thin cleats on which they rest. It is of course desirable here as in all other forms of installation to keep out of our cases everything possible in the way of a device that is not wholly indispensable and one can easily dispense with the clip or the nail so often employed to fasten coins to a tray. They detract somewhat from the appearance of the case and injure some coins, as for instance proof coins. By sloping the upright portion of the case one avoids the necessity of using the clips, or of adding narrow shelves; the latter are expensive and the specimens on one of the shelves are always obscured by the shadow of the shelf above.

The trays which are about 2 x 3½ feet, have the advantage of being just about large enough to contain 200 or 300 specimens, or approximately the number of coins of a given country that one would care to exhibit at one time.

The perpendicular case with shelves on the sides possesses, so far as I can see, but a single advantage, and that is economy of space. With them you can install an enormous number of coins and medals in a comparatively small room, but you might almost as well pack them into drawers, for nobody can consult them without a physical discomfort that the intellectual pleasure cannot make him forget, and an expense of energy and sacrifice of dignity beyond any hope of just compensation. For these cases extend almost to the floor and cause a man to stoop or even to get down on his knees (an unusual practice with most people) to see the pieces on the lower shelves; or they extend up very high and cause the visitor to crane his neck, if not climb onto a chair, to see the uppermost specimens; and, if they do not extend very high or very low, they can hardly be said to possess any advantage to recommend them.

Lastly I wish to refer to the small boxes with a label card attached. The advantage derived from the use of such boxes is very doubtful, and there are some decided disadvantages. They provide a convenient label and they make it sure that coins and labels will not become confused, and also, an important feature, protect the coin thoroughly against abrasion when handled. But on the other hand the box obscures important details of the piece except where the light falls most favorably, and this obscuration of the specimen is still further increased by the undesirable white background. As is well known the most desirable background for both gold and silver is either blue or maroon, of which the latter is probably to be preferred. The pasteboard box gives us a white background which is not only in itself undesirable but soon becomes soiled and unsightly.

The question of labels cannot be answered alike for all cases. Where specimens are so small and numerous it is obviously impracticable to label each one; nor is it best to do so. In the cases we want only a few general labels to indicate the country and the monarch, and perhaps an occasional designation of the denominations. A carefully prepared guide book is by far the best; and few departments of museum work offer material for a guide book that will prove more attractive and instructive to the layman than that of coins and medals.

W. J. Holland.—" I requested Dr. Comparette to speak to us because I wished information, and I know of no man better able to inform us about this subject than the gentleman in charge of the admirable collections belonging to the United States Mint in Philadelphia. The problem of installing our own collection of coins came up for consideration, and without much light and without much precedent I resolved upon practically what has already been pointed out by Mr. Comparette as the method employed at the mint, the building of cabinets in which there is a combination of horizontal and perpendicular cases. We have obviated the necessity of stooping when consulting the contents of these cases by placing the exhibits, as the painter would say, 'on the line.' The perpendicular cases are not very high. In front of them are the flat cases, which are not so deep that the observer is compelled to reach forward to read the labels. In the perpendicular cases we have compartments in which we put a piece of woodwork composed of 3 ply veneers, which maintain an absolutely even surface. These are overlaid with cork a quarter of an inch thick on top of which we put a velvet cover. The coins are attached to the cork by means of silvered or gilt pins. The coin is supported by these little pins one below and one on either side. There is space for labels. These plaques can be removed from the frames in which they are exhibited and be stored in shallow trays which have been provided, and thus changes in the series exhibited can from time to time be made. As political events bring some one or other country before the public we can display the coins of that country. I believe it is a mistake to attempt to display more than a limited number of coins. We shall of course have on permanent exhibition a display of the coins of the United States, and probably a characteristic group of Greek coins."

C. M. Kurtz.—"I have devised a case for the exhibition of medals which is very simple, and provides a most admirable light. The case is shallow, with shelves about four inches deep and about five inches apart. On these I place strips covered with dark green cloth, which is preferable to velvet as it does not accumulate dust. These pieces lie back, resting on two little pins. A good black tack with a small head will do. By leaning back they get admirable light. You can install a tremendous number in a case of that sort. You can have a card at the side, giving the number of the shelf and the objects on it in order. There is no spotting of labels to take away from the beauty of the coins.

"Another way is to cut out a piece of passe-partout, allowing the coins to fit into the space. These could be hung in swinging frames. You can see both sides.

"A display of medals, particularly of French or Austrian origin, is always instructive from an artistic standpoint."

O. C. Farrington.—"The second method I think desirable, as it enables one to see both sides. The same result is secured by us by hanging medals from rods between two glasses. The coins are attached to the rods by 'clips.' We make the labels the color of the background, which is so simple and excellent an idea I wonder that others have not used it more."

The Association at 11 : 30 A. M. adjourned in order to accept the invitation given by Mr. Robert C. Hall to take luncheon at his country seat, "The Meadows," at Ross Station, on the Western Pennsylvania Railroad.

It had been the intention of Mr. Hall to entertain his guests under the shadow of the beautiful trees upon his estate, and he had provided a barbecued ox as the *pièce de résistance* of the menu. The dripping skies forbade the execution of his purpose, and the guests, after viewing the ox as he was being turned upon the skewer over a bed of glowing charcoals, repaired to the mansion, where, having inspected the remarkable collection of Indian baskets which Mr. Hall has assembled, sat down to a luncheon charmingly served, although not in the rural setting which the host of the occasion had originally intended.

After luncheon, at 3 : 15 P. M., the Association was called to order in the drawing room of Mr. Hall's house by President Bumpus. By a rising vote the thanks of the Association were heartily tendered to Mr. and Mrs. Robert C. Hall for their generous hospitality.

As some time remained before the arrival of the train to convey the Association back to Pittsburgh, the president suggested a brief session.

Dr. George A. Dorsey read a brief paper upon

THE MUNICIPAL SUPPORT OF MUSEUMS

There are museums and museums; the meaning of the function of a museum today differs from that held yesterday. The definition of a museum itself has changed and is changing. I have elsewhere defined the aim or chief function of a museum, the investigation of those phenomena which fall within its scope, with the view of endeavoring to advance science. If this definition of the function of a museum has any merit, it follows, as I shall attempt to show, that the museum will command and deserve the support of its municipality, state, or nation, as the case may be, just in so far, and only so far, as it is true to this high function, namely, the advancement of science. The question therefore resolves itself into a judgment as to the value of science itself. Of the value of science to you, it is certain that there is no need for an advocate. A few words then will suffice. Briefly, describing in the fewest words our conceptions of phenomena, science represents today the highest point so far reached by human intelligence. This does not mean that this point is a fixed one, for it is a trite saying that the science of yesterday is the superstition of today, while that of today in generations to come will be twentieth century folk-lore. But at all events, our science not only represents the highest point reached by human intelligence, but it embraces the wisdom of all that has gone before, and it furnishes us with our one guide for the future. Unfortunately the principles of science today are so little heeded by such a great majority of us that our manners and customs, and social and religious life, are based not so much upon reason and intelligence as upon habit and blind, unthinking obedience to what has gone before. It thus appears that science and reason stand opposed to dogma and superstition, but that dogma and superstition are doomed to an early disappearance scarcely any one believes. But at any rate it is the privilege and duty of every scientific institution to hasten this time to the best of its ability. It seems to me that the true value and importance of any institution to a community lies in the power which it may exert upon the people at large to call into consciousness the various activities of their life. The museum to accomplish this must appeal to the reason and stimulate the imagination of the people. If it can do this, if it can set forth in an intelligent manner a few of the great principles or laws of science, its power for good in any community can not be over-estimated. As there is the need and demand for scientific training today, and it is certainly greater today than ever before because more accessible, so there is the need for public museums which shall bring the facts and laws of science to the public; and in so far as a museum fulfills this high function, to that extent does it merit and, in my estimation, will it receive public support.

A general discussion then took place, which was participated in by Dr. Bumpus, Dr. W J McGee and others.[1]

The Association returned by train to the East Liberty Station of the Pennsylvania Railroad, where a large number of the delegates, under the guidance of Mr. Anderson H. Hopkins, the librarian of the Carnegie Library, thoroughly inspected the East Liberty Branch Library of the Carnegie Library of Pittsburgh.

Evening

The Association reconvened at 8 P. M. in the Lecture Hall of Science, Dr. H. C. Bumpus in the chair.

Dr. W. P. Wilson presented a paper upon

THE ORGANIZATION AND DEVELOPMENT OF THE PHILADELPHIA MUSEUMS

The Philadelphia Museums was organized by City Councils in 1894, for the purpose of developing a group of museums, which later might be known under several heads—general, scientific, economic, educational, and commercial—classed together as one institution. The Philadelphia Museums is governed by a Board of Trustees consisting of representative business men, appointed for life, and the Governor of the State, the State Forestry Commissioner, and the State Superintendent of Public Instruction, as *ex-officio* members; also the Mayor, the President of each of the two branches of City Councils, the President of the Board of Education, and the Superintendent of Public Schools, as *ex-officio* members for the city of Philadelphia.

The commercial and economic museums were first developed. Money for the increase of commerce and the study of economics could more readily be secured than for other departments. Today the work which stands out prominently is:

I. THE INTERNATIONAL BUREAU OF COMMERCE

This bureau for the development of foreign commerce secures its support from the merchants and manufacturers who need information on the conditions and possibilities of foreign commerce. This bureau is in correspondence with thousands of business houses in cities in all parts of the world. It gives to them information concerning trade conditions of whatever character asked throughout the United States. It puts the American manufacturer in touch with those foreign houses which handle his particular output. This bureau also gives information on methods of shipping, on special lines of manufacture in different parts of the world, and how trade can be secured on either side of the great oceans.

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[1] Owing to the unfortunate absence of the stenographer no record of this discussion has been preserved.

II. THE LIBRARY

While agents for this bureau are maintained in many cities, a large library, a department for itself, filled with foreign government documents, statistics, and government publications from all over the world, is a very important supplement to the information required in the bureau. This library is peculiar in many directions. It has no equal in the United States, when one considers its foreign trade publications. Its beginnings were accumulated from the books taken to different expositions by foreign governments and then presented to the museums.

It maintains a department filled with the directories from all the large cities of the world. It is also the most complete consular bureau found in any country, having on file the consular publications from every country sustaining such service. It also includes the various official books—yellow books, blue books, and the like; official government statistics and publications; trade reports; chamber of commerce reports from such organizations all over the world; maps, topographical and other forms, from abroad; together with all the latest books of travel and exploration. Nearly one thousand current newspapers and trade and technical journals, with dailies from leading foreign cities, are on its forms.

All these facilities and many more are made use of by the Bureau of Foreign Commerce in the interest of enlarging our trade with foreign countries.

III. THE MUSEUM PROPER

The museum proper contains a large number of ethnographic exhibits and a great display representing geography and commerce, all under a scientific curator. The complete exhibits have been generally arranged geographically.

For instance, the collections coming from different parts of Africa have been so placed as to represent the actual geographical location of the different divisions. In one case may be arranged the ethnology of a special tribe or location, and adjacent are the raw products which form their clothing, the gums and resins which they may have used or collected, and the different materials which may have entered into the economy of their living; and, last of all, the exhibits of textiles, implements, or articles of any kind, such as at the present time are made in civilized countries and sold to these people. Therefore, in the resumé of the collections of any region you have a more or less complete history of the life of the people.

IV. Educational Work

The educational work of the Philadelphia Museums is directed in three important channels beyond the general educational work always in progress in a public museum.

The first attempt to reach the public schools was made by sending out loan collections transported from school to school. These collections were made to harmonize with the work in the different grades. This method was found to be very unsatisfactory because the teachers invariably desired to keep the collections permanently. The next and more successful attempt (which is still being continued), was begun after conference with the Superintendent of Public Schools of Philadelphia by inviting all the teachers of the city to bring their classes and schools to the museums to listen to lectures on commerce and geography, selecting from lists of subjects given them such as they desired to have their school or classes hear, and arranging a date with the museums at which time this selected lecture could be given.

Our first work was begun in February of 1906. From that time until the close of the school year, in June, about 10,000 children with some hundreds of teachers attended these selected lectures.

The subjects covered some twenty-five different countries and ten or twelve other topics not geographical in character, such as the cotton interests of the United States, or the cotton interests of the world, or wheat, or sugar, or coal, or forestry, treated in the same way. Also lectures on beverages, including tea, coffee, and chocolate; or fibers, including cotton, flax, and wool.

The work was conducted in the following manner:

The teachers were recommended to bring only small classes of from 50 to 100. The length and character of the lecture depended upon the grade of the class. After the lecture these classes were divided up into small squads and taken in hand by the museum curators and conducted through the exhibits representing the country on which the lecture had been given, the exhibits and products being thoroughly explained and discussed by men who were perfectly familiar with the subject in hand.

During the past year, by previous engagements for times and subjects, we have lectured on many topics to more than 8,000 pupils and 300 teachers, coming from 60 different schools of the city. This work we are continuing year after year, hoping finally that the museums instruction may become a part of the school system of Philadelphia.

For six years the Philadelphia Museums has been conducting, under state appropriations, a special educational work for the benefit of the study of commerce in all the leading high schools of the state of Pennsylvania. For the purpose of carrying on this work we made up a collection of products and materials for distribution coming from different countries, which more or less adequately represented an epitome of the commerce and trade of the world. This collection, including 110 8 x 10 black and white photographs showing processes, customs, habits, and costumes of the people of the world, the back of each photograph filled with information describing accurately the scene depicted and its relation to commerce and the country which it represents; between 30 and 40 maps of distribution of products, and a number of other pictorial illustrations together with hundreds of objects, classified in series, all attached to accurate geographical and commercial information, has been sent out and installed in cases built for the purpose in about 1,200 schools in the state of Pennsylvania. The collection was, in every case, presented under the state appropriation, to be the property of the school where it was installed.

The museum is continuing this work, and from time to time supplementing what has been sent out to different schools by sending other material.

For the next two years the state has made an appropriation of $20,000 for this work. This year the museums has planned three smaller collections of different sizes to be placed in grammar and elementary schools of lower grades throughout the state, so that no elementary school need be without the means of making some simple reference in its courses to commercial matters from a scientific standpoint. There are many thousands of schools in the state of Pennsylvania which should avail themselves of these different collections.

Benjamin Ives Gilman.—" I have been wondering as I have been seated here whether it is not time for this Association to consider the question of forming a directory of the museums of this country. The information given by Dr. Wilson is of great interest to me, and is, I imagine, new to most of those who are present. The thought has occurred to me that the preparation of a directory showing what museums are in existence in America, and along what lines they are working, is highly desirable."

L. W. Jenkins.—" A directory of the museums of the United States, prepared by Mr. F. J. W. Merrill, was published by the New York State Museum some three or four years ago."

Benjamin Ives Gilman.—" I do not know that publication. It strikes me that much valuable information could be collected through the medium of such a publication."

L. W. Jenkins.—" The directory published by the New York State Museum did not include, I think, museums of the fine arts."

Mr. P. M. Rea.—" Such a directory, as has been suggested, should include rather more than was included in Mr. Merrill's report. That report, while useful, conveys very meagre information in reference to many institutions, and is little more than a list of names.

" Recurring to the paper of Dr. W. P. Wilson which has just been read, I would like to ask what relation his institution holds to the various departments of the government of the state and of the United States. I should like to know if the activities of his museum overlap or supplement in any way the work being done by state and national agencies."

Dr. W. P. Wilson.—" The Philadelphia Museums is doing work which the United States Government could not do. We have entered into relationship with the various chambers of commerce, not only in this, but in foreign countries. When we write for information it is freely given to us. If we wish material for examination or in exchange we readily get it. If a department of the government were to undertake to do this the matter would become immediately a subject of official correspondence and there would be delay and even failure. An agency which is not distinctively governmental can work along the lines upon which we are working far more rapidly and far more successfully. Whenever you enter the field of governmental activity you enter a territory overlaid with red tape in which the feet presently become hopelessly entangled. The Bureau of Commerce and Labor had not been established when our work was begun; the Bureau of American Republics had not undertaken the work which we are doing extensively. We are on friendly terms with the Bureau of Commerce and Labor. We stand in relation to a multitude of important commercial houses in foreign countries. We favor them by giving them all kinds of information which they desire, treating them as impartially as possible, and in return we ask for information, when we require it, and this is most carefully collected and given to us. I think it would be impossible for governmental agents to do work as accurate as that which we are doing."

At this point the reading of papers and their discussion was interrupted in order to allow Dr. George A. Dorsey, the secretary of the Council, to present a report from the Council.

The report recommended:

1. That the invitation of the Field Columbian Museum, the Art Institute of Chicago, and the Chicago Academy of Sciences to hold the next meeting in the city of Chicago on May 5 to 7 be accepted.

2. That the election of officers to serve for the ensuing year be held this evening at 8:30.

3. That a volume of Proceedings be published, and that the president and Dr. W. J. Holland and the secretary, Dr. George A. Dorsey, be a committee to prepare the records for publication.

The various items in the report were taken up seriatim.

The recommendation fixing upon Chicago as the place for the next meeting was unanimously adopted.

The Association then upon motion proceeded to ballot for officers for the ensuing year. The following were elected:

President—Mr. William M. R. French, Art Institute of Chicago.

First Vice-president—Dr. W. J. Holland, Director, Carnegie Institute, Pittsburgh.

THE FAIRBANKS MUSEUM OF NATURAL SCIENCE, ST. JOHNSBURY, VERMONT

Second Vice-president—Mr. F. A. Lucas, Curator-in-chief, Brooklyn Institute of Arts and Sciences.

Secretary—Mr. Paul M. Rea, Curator of the Charleston Museum, Charleston, S. C.

Treasurer—Dr. W. P. Wilson, Director, the Philadelphia Museums.

Councillors (to serve for three years)—Dr. H. C. Bumpus, Director, the American Museum of Natural History, New York; Dr. George A. Dorsey, Curator of Anthropology, Field Museum of Natural History, Chicago.

A paper illustrated by lantern slides was presented by Miss Delia I. Griffin, of the Fairbanks Museum of Natural Science, St. Johnsbury, Vermont, upon

THE EDUCATIONAL WORK OF A SMALL MUSEUM

Certain problems can be worked out where one has personal touch with the community, which are impossible in a large city. How a few of these problems are being solved by the Fairbanks Museum I wish now to submit to you.

A generation ago a barefoot boy on the hills of Vermont became interested in birds and flowers, and started a home museum, like Rollo of story-book fame. His interest, his collection, his years, and his wealth increased, until seventeen years ago he erected the Fairbanks Museum, endowed it with funds sufficient to keep it running perpetually, and arranged for a Board of Trustees to manage it. Today, although Col. Fairbanks has passed to the Great Beyond, his spirit of interest in children and of love for all that lives in God's open air is the controlling motive of the institution which he founded, and its activities all follow lines which he suggested.

The museum, situated in northern Vermont, is in the midst of a farming community, and directly in a manufacturing village of 7,000 people. One thousand men are employed in the scale shops. Most of them own their homes, possess small kitchen gardens, and are typical of the American workingman at his best. In this environment our chief aim is to bring brightness, breadth of view, and interest in the artistic and elevating side of life to the children of these men.

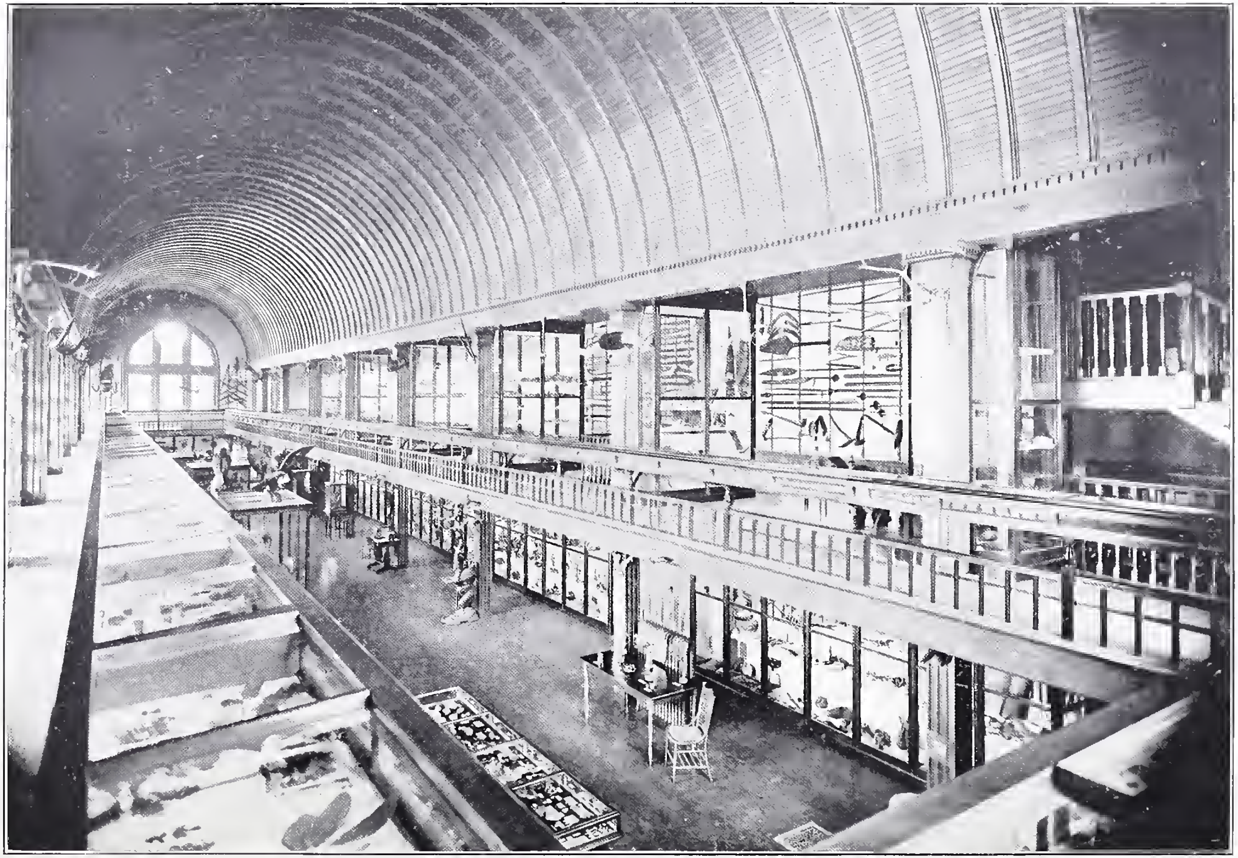
This purpose is largely accomplished by means of lessons in nature study, which are given to the school children of the town. One week out of each month, the museum class-room is the center of interest. The groups of children, each accompanied by its teacher, come from the public schools, and lessons are given them by the Director of the museum—lessons, not lectures. The pupils have as active a part as they would in any school exercise, asking and answering questions, and thinking out the problems which flower or bird may suggest. In general, also, they provide the material for their study—flowers or plants, seeds or fruits, or the common minerals of the region. Usually some preparation in the line of out-of-door study of the plant in its environment or its relation to insects, is requested when subjects are assigned for the lessons, a week in advance. Perhaps instead, an experiment is suggested to follow the lesson, and the young people, after studying lime rocks, make mortar and plaster, and after a series of lessons on gypsum, make casts of various objects. One class this winter made a cast of the hand of the prettiest girl in the room, and while it may not have been a success from an artist's point of view, that class gained an intimate knowledge of the properties of plaster-of-paris, which will never desert its members.

For this same series of lessons, the museum contributed all its variety of gypsum specimens, and the beauties of satin spar and alabaster added much to the pleasure of the students. Often the entire class is taken directly to the cases which are opened, and all specimens which can be handled without injury, are given to the pupils.

Among the subjects studied at these lessons are the following: "Seed Distribution," "Crickets and Grass-hoppers," "Dry and Fleshy Fruits," "Caterpillars, Moths, and Butterflies," "Golden-rods and Asters," "Ferns," "Preparation of Trees for Winter," "Defensive Organs of Plants," "Tree Buds," "Germination of Seeds."

From 150 to 200 class lessons are given each year and they are supplemented by school work carried on by the teacher. In order that this may be done in the best manner, teacher's meetings are held frequently during three months of each year.

Once a fortnight, after school hours, the teachers come by grades and are given definite instruction in the line of work laid out by the Director. Both subject matter and methods of teaching are given,



THE FAIRBANKS MUSEUM OF NATURAL SCIENCE. MAIN HALL, THE NAVE LOOKING SOUTH and books and scientific publications are read or loaned to the teachers.

By request of the state superintendent of schools, an "Outline of Nature Study" has been written by the Director, and this, printed by the State Board of Education, is in the hands of every teacher in the state.

Second only to the class work in interest and popularity, are the bird walks which are conducted in the following manner: From the middle of April to the end of June, groups of children about a dozen in number, meet at the museum steps at seven o'clock. They are at the school building ready for school at nine and meanwhile have tramped from one to two miles finding the spring birds. Anywhere from fifteen to forty birds may be seen and heard, according to the weather conditions. Some member of the museum force accompanies each expedition, and every child who wishes is given an opportunity to go about four times a season. Frequently children come to the museum during the day to closely examine a bird that could not be well seen during the morning tramp, and their interest is increased by a small case placed in a prominent position near the entrance door and containing the newest bird arrivals. Only thirty-five specimens are allowed in the case at any one time, and both children and adults who are studying birds for the first time find it far easier to identify a perplexing bird visitor from this case than from the larger general collection.

These birds are also loaned to the schools, but there is comparatively little need for loan collections, as owing to the compactness of the town, the children can so easily come to the museum itself.

An interesting outgrowth of the bird walks is the Junior Audubon Society which meets at the museum once a month, from January to June, in two divisions. Each section has its child officers, who preside, read reports, make motions, and in every way carry on the business of a society with much dignity and solemnity, besides presenting a literary program.

The June Meeting is given up to a bird contest for determining which child in each division is most thoroughly acquainted with the birds. The prizes, five-dollar gold pieces, are offered by one of the bird-loving citizens of the town. For a month before the contest every hour of the day sees eager children in front of the bird cases and the words most familiar to the director are "Please can you tell me what this bird is? He has a brown back"—and then follows a description, remarkably accurate when one remembers the age of the observer, and usually the members of the office force with wits sharpened by constant guessing are able to lead the questioner to a specimen and receive a satisfied "Yes, that's just the bird."

The interest in insects is not so universal as that in birds. Still, each September and October sees the caterpillar boxes well inhabited by the "crawlers" the children have brought. These cages are placed on tables in the main hall and are the center of interest during those months. The children bring fresh leaves daily and are very faithful in caring for their proteges. Their interest is keen when the chrysalids and cocoons are formed, and frequently most of the hours out of school are occupied in watching cecropia caterpillars fashion their winter quarters and fasten themselves in. And the pride of the individual child whose special crawler finishes his work in a day while another of the same kind takes two days for the task is interesting to see.

Much home observation is stimulated by this museum work, and during the late summer and fall all sorts of insects are carefully brought to the director for identification or to display, then carefully taken home and watched for future developments. One child of ten with a little help from his aunt, and with some special good fortune from Dame Nature, has followed the whole life cycle from caterpillar to caterpillar, of the white tussock moth and has now fifty or so young crawlers which have moulted for the second time.

The last large item of educational work to be mentioned is the flower table. From the time the first arbutus blossoms on a southern hillside until the witch hazel lets fall its crinkled yellow petals late in the autumn, a procession of wild flowers is to be seen in the museum. The specimens are arranged in clear glass vases, on tables in a prominent part of the hall. Frequently fifty specimens are displayed at a time, and often all the varieties of one flower are to be seen the same day. Last week the violet table held twelve varieties, all found within a five-mile radius of the museum, and each September our fifteen goldenrods are exhibited at the same time.

In the case of rare flowers, some of the orchids for instance, only two or three flowers are displayed, often with a note warning the public of the danger of gathering them in quantity and so aiding in their extermination. The literature of the "Wild Flower Preser-

THE FAIRBANKS MUSEUM OF NATURAL SCIENCE. A TYPICAL DISPLAY ON THE FLOWER TABLE vation Society" has a place on this table, and many of its leaflets are taken by visitors.

All the flowers are labelled with both common and scientific names, and if a child brings a specimen, his name also appears. A large number of the flowers are brought by the children; many are gathered on the bird walks, and by the museum force when searching for herbarium specimens; and some of the rare contributions come from ladies, who, in their leisurely drives over the country roads of this vicinity, find these beautiful specimens.

This flower display is easily the most popular feature of the museum work. Visitors come to it first and linger by it longer than by any other exhibit; several invalids watch eagerly for the reports of it in the weekly papers; and the children, competing with each other to see which shall bring the largest number of flowers, gain a familiarity with the specimens and the fields and woods in which they grow. More valuable yet is the healthy influence which absorbs the children's minds and the love of nature to which they unconsciously grow.

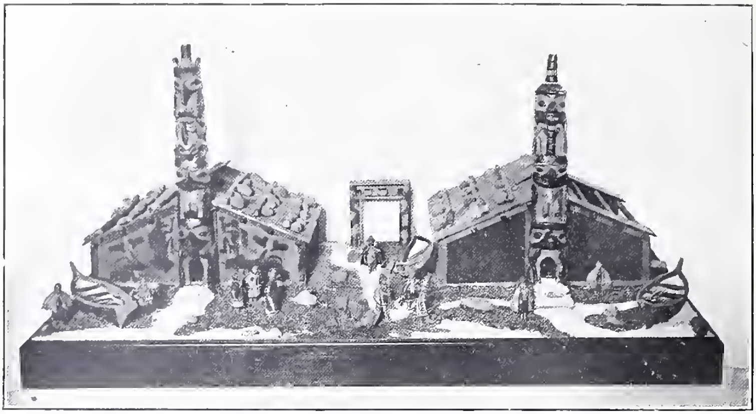
The activities are not large, you see, but neither is the museum. It is, however, the home of every young person in the town, from the little four-year-old who refers to the giant cast as the "Humptydon" to the academy senior who studies the Brandon fossil fruits.

Every one has a personal sense of ownership, and rightly so, for Col. Fairbanks at the dedication said to the children, "I want you to understand from this time on, that this building is to be yours, and that you are to guard its interests."

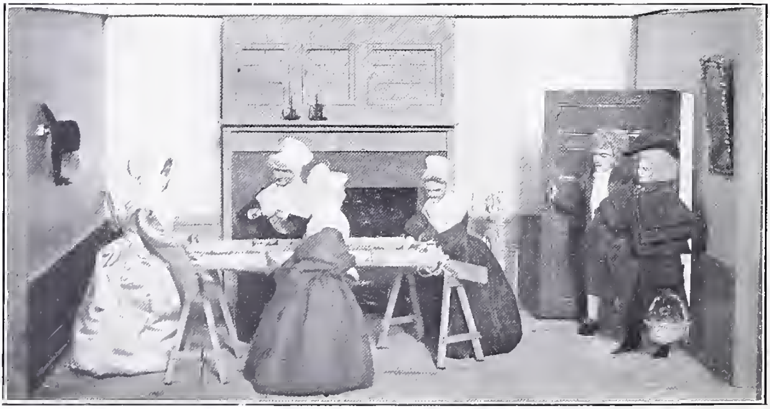
And they do.

Dr. W. P. Wilson.—"This is the most admirable presentation of the work of a museum which I have ever listened to, and I am sure we feel deeply grateful to Miss Griffin."

Dr. A. E. Frost.—"I am from Vermont, and I lived in my boyhood in St. Johnsbury. I have been a resident of Pittsburg for thirty-five years. I well remember the time when the only thing known about St. Johnsbury was the fact that the Fairbanks scales were made there. I am glad that we have had a representative of the old town in Pittsburgh to tell about another feature of the life of St. Johnsbury. I have boyish recollections of Mr. Fairbanks. He took a kind interest in all youth. The beginning of his museum was



MODEL OF A PORTION OF AN HAIDA INDIAN VILLAGE. IN THE GEOGRAPHY ROOM, CHILDRENS MUSEUM, BROOKLYN INSTITUTE



MODEL OF A GROUP OF QUAKERS AT A QUILTING BEE. IN THE HISTORICAL ROOM, CHILDRENS MUSEUM, BROOKLYN INSTITUTE

Progress toward the ends in view has taken place slowly but steadily. As a branch institution, the Childrens Museum derives its income for maintenance from the annual appropriation made by the city of Greater New York to the Brooklyn Institute of Arts and Sciences. In the enlargement of its collections it depends upon the work of its own museum staff for the collection of material, and upon the modeler, cabinet-maker, artists, and taxidermists of the Central Museum for highly specialized labor, while the money used in the purchase of new specimens is granted, by special appropriation of the Trustees, from a general Museum Collection Fund, composed of private donations and legacies.

After eight years of growth the Childrens Museum of today occupies the entire Bedford Park Building, comprising twelve exhibition rooms, a lecture hall, and a Childrens Museum Library.

In the exhibition rooms are collections of natural history, geography, United States history, and art, to which children and teachers make constant reference.

Our natural history collections are distributed in five rooms, and arranged for children of different ages. A room of "animal homes" contains the male, female, and nest of common Long Island mammals and birds. This collection is particularly attractive to little children. A synoptic room assists the normal and high school pupils in studying zoölogy, while the collections of amphibia, reptiles, and birds delight children of all ages. In the bird room such birds as the condor, lyre bird, cassowary, albatross, etc., are grouped in a case labelled "Birds We Read About," and appropriate quotations from the writings of poets and authors accompany each specimen.

Our insect collection contains a systematic series of the moths, butterflies, beetles, and other insects of Brooklyn and vicinity, each specimen accompanied with a label giving the common and scientific names, the sex, and the locality. General labels noting group characters are placed in each section. There are also little model groups picturing what insects do and special exhibits illustrating mimicry, protective coloration, and life histories. A hive of living bees, a colony of ants, and the various water insects in aquaria are of almost daily use to nature study classes.

In order to make our mineral exhibit pleasing to children we illustrate the economic uses of minerals by displaying mineral products with specimens. With quartz are amethyst and crystal lenses.

Flowers of sulphur, roll brimstone and matches, with the sulphur crystals form a part of the sulphur exhibit. Gypsum is shown with a plaster-of-Paris model, and pictures of mines and processes of manufacture are freely used. Brilliant and beautiful minerals are used for their aesthetic effect.

The museum historical exhibits began with old relics, and arms and weapons formerly used in the wars of our country. These have been chronologically arranged, supplemented with charts and pictures—and more recently with model groups to illustrate the period of colonization and settlement. Six of these groups are now installed, each representing one of the types of European colonists—Spanish, English, French, Dutch, etc.—who effected permanent settlement in the American colonies. There is something about these miniature scenes strikingly engaging to the child. They stimulate him to close and repeated observations and comparisons, and with the help of the childish imagination carry him back into the period to which they belong.

While charts, globes, and maps are much used in the geographic exhibits, the model group method has been adopted for bringing together the remote people of the world. By means of these miniature scenes human beings appear under extremely unlike conditions of climate and physical features, both of which determine appearance, dress, industries, character, and other distinctions.

The relation of man to his environment, as shown in his place of settlement, his occupation and industries, as determined by the climate and physical features of his surroundings, and his intercourse with his fellow men, are important relationships not always clear to children who study merely globes, maps, and pictures, lacking in that dramatic quality, which is an important factor in linking the childish imagination with what is new and strange.

Each scene chosen depicts the natural physical characters of the race represented. It shows the family in characteristic dress, the home and its surroundings, including useful domesticated animals, implements and tools, and men at work. We have begun this series of geographic groups with a choice of those peoples whose modes of life are least complex, since it is among such races that the dependence of man upon physical environment is most clearly shown, his food, clothing, and shelter often coming from a single source.

The important underlying principle to be emphasized in exhibits of this character is that of relationship. The child is ever ready to put himself in the place of the liliputian being, whose environment he now sees spread out before his eyes. What his far-away brother has and what he can do, are to him important subjects, about which he asks many questions.

Besides the more important museum collections there are smaller exhibits, containing living plants and animals, which are frequently changed. These the children watch closely, often coming to the museum day after day to observe some pet animal.

We try to get in touch with children through the schools; for experience shows that the best results are obtained by coöperation with enthusiastic principals and teachers. Our exhibits are therefore correlated as far as practicable with the public school work, and lectures supplementing grade courses of study are regularly given during the school year. Pupils are informed of these lectures through the *Museum News,* a monthly publication which is mailed to the principals of the schools, and when once they begin coming to the museum they usually continue their visits.

Between the hours of 9 A. M. and 5:30 P. M. on every week day, and 2:30 to 5:30 P. M. on Sundays, when the museum is open, children are welcomed and encouraged to the fullest enjoyment of every attraction.

A Childrens Museum Library, which occupies two rooms in our building and forms a part of the museum work, contains about 5,000 volumes consisting of the best works on natural history in its broadest sense. The library provides books of information for visitors, and in offering books on the lines of school work forms a valuable school reference library adapted to giving assistance to teachers and pupils. The two trained librarians permanently in charge of the reading rooms enable visitors to consult books without formality or loss of time.

In the absence of official relations with the public schools the museum attendance is exclusively voluntary. Children and other visitors usually arrive with some definite end in view and the members of the staff endeavor to assist toward that end.

We try to give our visitors the same freedom and pleasure that they would experience in entering a delightful home, where every plan is for the enjoyment of guests. Members of the staff are always happy to escort visitors, to answer questions, take specimens from the cases for closer examination, or tell stories to younger children. School boys and girls have learned that the museum will help them over many a hard task assigned by teachers, and thus the work of the museum has become as diversified as the individualities of its visitors.

Principals, teachers, and parents unite in their testimony as to the quickening influence of the museum on the mental growth of their children, and an increasing number of teachers find time to bring classes for supplementary half-hour talks. Additional credits in school are frequently offered to such pupils as give satisfactory evidence of having profited by their visits.

To measure the results of our work would be to trace its effect on the development of each child that has come within the influence of the museum for any length of time; but when a blind boy tells us that he feels as though he had entered a new world ever since he has been allowed to take the stuffed animals in his hand; when a bright-eyed youngster, returning from the country, convinces us, by his discriminating accounts of summer pleasures, that his enjoyment was enhanced by knowledge acquired at the museum; when a boy from Columbia University assures us that his first real interest in botany resulted from the spare moments he, as a high school lad, spent in our botany room, we feel that there is reasonable ground for encouragement.

Taking statistics as evidence of success there can be no question as to the value of a children's museum to our community. For the past four years the average attendance has exceeded 94,000 visitors. In 1906, 561 visits were recorded from interested teachers, and for the same period the attendance at our half-hour talks was 17,253.

Among these visitors 125 schools in Greater New York were represented.

The Childrens Museum has long since outgrown the limits of its present building. In two different months of 1906 the average attendance at each lecture was 120, and that in a lecture room which seats only 60 persons comfortably. The only procedure under these circumstances was to repeat the talk until every child had heard it. On one occasion when 500 children presented themselves for admission to the lecture, a line was formed where children stood for several hours rather than take the risk of a poor seat.

The library and exhibition halls, as well as the lecture room, are so frequently overcrowded as to seriously interfere with the comfort of visitors. The only practicable remedy for this condition of things must be a new building. Already the New York Legislature has authorized the city to build a new Childrens Museum as a cost not to exceed $175,000, and with a structure thus adapted to present and future needs, the work can expand and the museum serve more efficiently the community whose interest in educational advancement has brought it to its present state of usefulness.

A paper by E. K. Putnam, acting Director of the Davenport Academy of Sciences, Davenport, Iowa, on "The Educational Work of the Museum of the Davenport Academy of Sciences," was read by title, owing to the absence of Mr. Putnam.

The Auditing Committee reported that it had audited the accounts of Dr. W. P. Wilson, the treasurer, and had found the same correct, and recommended the approval of the treasurer's report.

Adjourned.

SESSION OF JUNE 6, 1907

Morning

In the absence of Dr. Hermon C. Bumpus, the president, and of the vice-president, Mr. W. M. R. French, both of whom had been compelled to return to their homes, Dr. W. J. Holland, the second vice-president, took the chair.

Upon motion the invitation of Mr. Anderson H. Hopkins, the librarian of the Carnegie Library, to personally conduct the members of the Association through the library, was accepted, and the hour of three o'clock in the afternoon was fixed as the time for this visit.

Upon motion of Mr. Lucas it was

Resolved, That the American Association of Museums extends to the International Zoölogical Congress convening in Boston in August next an invitation to visit the museums represented by this Association, and to express as a body its congratulations to the Congress on the occasion of its visit to the United States.

Dr. W. P. Wilson then read a paper upon

A LIBRARY MUSEUM FOR USE IN THE COMMON SCHOOLS OF THE CITY

A large number of individual collections, each representing the leading industries, institutions, habits and customs, with products of a country, have been made up, placed in large telescopic, rectangular, canvas cases, and labelled on the end with the name of the country which each collection represents, in large letters. Thus we have on the shelves, like books on a library shelf, ten cases with "Japan" on the ends, all exactly alike, ten cases labelled "China," ten cases inscribed "Philippines," ten cases labelled "Mexico," and so on throughout the leading countries of the world. We have selected ten, thinking it a sufficient number to enable us to always have some of each country on the shelves.

When a teacher in any school is ready to teach her children about

Mexico or Japan or Australia or Porto Rico, she sends for the case containing the collection for that country.

I. The principal industries of Japan are the manufacturing of (1) Lacquer work, (2) embroidery, (3) cloisonne, (4) porcelain, (5) mattings, (6) leather work, (7) bamboo wares, (8) metal wares, (9) paper of many qualities, (10) carvings in wood and ivory, (11) painting and drawing, (12) silk fabrics, (13) cotton and woolen goods, (14) toys, and (15) straw and chip braids.

II. The forest products are lumber, bamboo, lacquer, and wax.

III. The farm products are rice, barley, and other grains, beans, silk, most important of all, tea, peanuts, lily bulbs, wax, peppermint-oil, menthol, ginseng, cotton, ginger, oranges, red pepper, persimmons, tobacco, rape, and other oils, sake or rice wine, etc.

IV. The mineral products are copper, sulphur, manganese ore, coal, iron, lead, silver, gold, petroleum, etc.

V. The fishery products are dried or salted fish, including bonito, anchovies, sardines, mackerel, salmon, fish oil, pearls, coral, fertilizers, cuttle fish, seaweed gelatin, etc.

These industries in the shop, on the farm, or on the sea, are nearly all well represented in the collection by specimens as well as photographs. This collection, coupled with some historical and commercial information, enables the teacher to make a more intelligent discussion of Japan, or any other country treated in similar manner, than could be done through ordinary methods.

These collections are drawn from the museum in the same way that books are drawn from a library. They are carried out, delivered, and returned at the proper times by the museum conveyance.

Such work as this, I am aware, has been extensively done in natural history in the city of New York by the American Museum of Natural History, but so far as I know has not been undertaken under the general lines of ethnology, commerce, and geography in any institution in the United States.

Dr. Wilson illustrated what he said by an exhibit of one of the circulating collections prepared by the Philadelphia Museums for use in the schools, the collection consisting of material illustrating the life and industries of Japan.

O. C. Farrington.—"May I ask Dr. Wilson whether exhibits such as this which he has displayed can be purchased?"

Dr. W. P. Wilson.—"We have, in a few instances, in response to the urgent solicitation of institutions, sold them collections of this sort, but we do not wish to make this a practice, as to do so might involve us in trouble with the State, which makes us an annual grant for the maintenance of this work on the part of the museum."

Dr. O. C. Farrington.—"May I further trouble Dr. Wilson by asking whether he experiences difficulty in getting back the collections loaned to the schools?"

Dr. W. P. Wilson.—"Our experience shows us that every teacher takes pride in keeping the collection loaned to his school in good condition, and in returning it in the same condition in which it was received."

A Member.—"How long is such a collection as the Japanese exhibit, which we have seen, allowed to remain in the custody of a school?"

Dr. W. P. Wilson.—"No school is allowed to retain the collection longer than ten days. Some schools do not require the use of the collection as long even as that. A good deal depends on the grade of the school."

Dr. J. E. Talmage presented a paper upon

LOCAL REPRESENTATION IN MUSEUMS

The remarks I am privileged to make on this occasion are spoken in the interest of our smaller museums, those of local status and service, rather than as applicable to the vast collections lodged in marble halls, or to institutions possessed of great resources. Yet in examining collections that are extensive, valuable, and pretentious, I am sometimes impressed by the lack of local representation.

A mistake commonly made by museum visitors, and not always avoided by officials in charge, is that of regarding as most desirable representation of things far-off or foreign, to the neglect of the near and the common.

This defect may be but an expression of that human peculiarity which impels us to yearn after the distant and the relatively unattainable, while ignoring the good that lies within easy reach.

Astronomy is the most venerable of the sciences; geology, which deals with the stone, under our feet, is among the youngest. The child reaches vainly for the moon, and slumbers within the glare of the electric bulb, which, in its way, is no less a mystery.

In every neighborhood there is material of educational value. Consider the case of a museum located in a region of mountains. Does custom afford us any assurance that we can learn anything of mountains within the institution's walls? Lest it be argued that there is no need of such facilities in the presence of the everlasting hills themselves, let it be remembered that even the man of experience, the child of many years, is unable to comprehend and grasp the infinitely great, while a representation on a small scale may make plain truths which otherwise would never be recognized. You cannot bring a mountain into a museum room, but you can show its essential features, form, and structure by models, drawings, photographs, and other adequate illustrations.

But a few months ago I was traversing an interesting region in the far west—a picturesque valley, the floor of which once formed the bed of an inland sea. A town situated near the old coast line lies within easy access of shore phenomena in rich array. The town was proud of its schools and of its local museum. I was a visitor at the high school and witnessed a class exercise in physical geography. The instructor appeared worthy of his reputation as one well versed in the lore of distant lands. He knew of continents and oceans, and of rivers and mountains made famous in literature and history. The lesson of the day had to do with deltas. The teacher openly bewailed his inability to take his students to a delta, where they might observe for themselves its many interesting topographical and structural features; but sad to say, deltas were far away on the seashore. Yet that wise man climbed the gentle slopes of a typical lake delta every morning on his way to school. True it was a little one—convenient in size and otherwise admirable for direct observation and study—a sort of museum delta, if you please. Who of us can recognize the essential features of deltas as to form and structure by traversing the cane fields and cotton plantations of the Mississippi delta.

We learned but little as to the true cause of volcanic eruptions while vulcanologists confined their investigations to the greater and more terrifying of outbursts. Stromboli, a small volcano of relatively gentle action, has taught us more than Vesuvius or Krakatoa.

The earnest student and the skilled investigator have learned to observe and experiment on a small scale with the purpose of applying the knowledge so gained to greater things. To me a local museum collection appeals as an index to that part of the realm of nature there represented.

I was greatly interested in the account given by Mr. Rea relative to coöperation between schools and museums in the South. In the course of bird study he tells us the students are taken into the fields and required to find and describe the birds they are studying. I was much gratified to learn that the work did not end in this way, but that from the field the students were led to the museum where they studied more fully the specimens on the shelves.

Museum collections serve but part of their purpose if they are used only for display. They should serve as a constant incentive to study and research. Too often we content ourselves with the shell and care not for the seed within. You have heard of the oriental ruler who was much concerned over the waywardness of his son. He placed in the boy's hand a banyan fruit and asked him what he saw. The answer was, "A husk." "Tear off the husk; now what do you see?". "A shell." "Break the shell; now what do you see?" "Nothing." "Where you see nothing there sleeps a huge banyan tree."

In the glaciated region of our own country drift material may be looked for in every educational museum. Yet how uninviting and unattractive are the piles of subangular stones, masses of boulder. clay, and striated bed-rock, without adequate guides in the way of catalogue, explanatory pamphlet, and study references. Consider how much more impressive and effective such material will become if the dynamic features exhibited by existing glaciers are demonstrated. But here arises the thought, how can we bring a glacier into the schoolroom or the museum? A working model of a glacier may be easily prepared. A channel of sheet metal four of five inches wide and four to six feet long may be constructed, straight or sinuous as desired. This channel, representing the canyon, is placed with the lower end resting upon the floor at a suitable angle, the upper end being connected with a deeper vessel in shape and size resembling an ordinary two-gallon measure, with the side cut away to afford free flow into the channel. This reservoir, corresponding to the cirque or ampitheater in which the snows accumulate at the glacier head, is made to receive a quantity of stiff pitch previously broken into pieces about walnut size. Although the pitch is brittle is small pieces, it slowly descends the channel by a viscoid motion. It is easy to demonstrate differential flow as well as the cause of crevasses and moraines.

Educational exhibits should be of moderate extent. Every specimen should be of value as an illustration or a demonstration of some lesson feature. The excellent rule by which we exclude superfluous material from museum collections in general is specially applicable to exhibits intended to be primarily used as aids to instruction. Mere addition of material of the same kind as that already in place may detract from, rather than add to, the value of the exhibit. One of the greatest of man's mistakes is that of confusing growth with development.

Growth is a mere accretion of substance; development is increase of function, capacity, and power.

The Chair.—"The next paper to be read, according to the program of the morning, was to have been presented by Dr. Charles H. Hitchcock, upon the theme, 'How Museums May Aid Comparative Ichnological Studies.' Dr. Hitchcock informed me last night that he would be compelled to leave on the early morning train, and is unable, therefore, in person to present his paper."

Upon motion the Association resolved that the paper be read by title.

A paper by C. W. Hall was then presented and read by title. It is as follows:

THE SCIENCE MUSEUM: A FACTOR IN INTELLECTUAL AND INDUSTRIAL PROGRESS

The museum has become an important factor in the life of American communities. It is a valuable aid for the instruction of children, a place of interest and education for the adult, and a necessity for the student of pure and applied science and of every art. It is in behalf of the student of science that I speak.

Those who began their scientific studies in America a third of a century ago do not realize, without second thought, how the museum has grown into a necessity for the man of science. Then in every field of natural history the student had but to don his walking suit and spend a day or a series of days in the field to secure that which would give him continuous study for months and years; around the chemist lay problems so thick that selection of material was his first real serious study; indeed many a chemist can look back and see how he failed of fruition because he selected the wrong thing as the subject of his researches; the physicist had the principles of mechanics as established long before, the geologist had just seen the long contest between theological and geological opinion closed and proof accepted that the earth is the product of physical and chemical processes long in operation.

In the field of applied science, how little in the way of accomplishment bears date of a third of a century ago. The water-wheel and the engine were known; machines had come into use. Electricity was used, the telegraph was a success, and a cable across the Atlantic had just been laid. Such a measure as economizing in fuel had scarcely been thought of; a building or a bridge of steel was a phenomenon, it had occurred to but few that sanitary measures could be, nay should be, conducted everywhere, not only to arrest a scourge or eradicate a disease, but for the plain ordinary comforts of daily living.

Today quite different conditions prevail. In every activity of life we find fundamental ideas and principles made fast to scientific data. The collection of facts has been so extensive that the habit of thought among mankind has been changed. Objects and processes which a generation ago must be investigated are now so well known that they have become matters of dogma. In order to discover anything new—to add anything to the sum of knowledge already accessible to the qualified—a long pupilage is necessary. Observation must be continued for years; a wide range of associate data must be at hand.

From such illustrations—and they may be drawn from every field of scientific research—it is seen that conditions are rapidly advancing to that point when museums are a necessity for the highest work. It is not alone in the field of pure science that they must be developed; applied principles and processes must be set forth through collections showing both the failures and successes of those working in the field in earlier days. Such an opportunity for comparison is essential first of all in laying down the lines to be pursued in further research. What was sufficient for the preceding generation was grossly inadequate a decade ago; and today it simply excites our wonder and admiration, that with so meager an equipment so much of accomplishment had been realized.

With what can be seen of past progress we must associate future development. No one who foresees conditions, already casting shadows before, can doubt an intenser intellectual life and an urgent need for a closer search into the storehouse of nature for supplies and a utilization of resources now useless through lack of methods of adaptation.

Glancing at the status of the Central West, we see that the vast forests of lumber, from the black walnut of Indiana and Illinois to the magnificent white pine of Michigan, Wisconsin, and Minnesota are so nearly exhausted that these states are importing to maintain their own consumption. Clay beds, cement rock, and all good quarry stone are being drawn upon more than ever before. Concrete and steel construction have become the controlling factors in building operations.

Men who know—and it is they also who own—tell us that there is today in the state of Minnesota an iron ore reserve of only 1,300,000,000 tons carrying 49 per cent. and upwards of metallic iron; in all the ranges of Michigan and Wisconsin there are only 150,000,000 tons, or a total of only 1,450,000,000 tons for the Lake Superior region of the United States. The present rate of output is near 40,000,000 tons per annum; hence, without considering the increased output sure to come, in but little more than the next third of a century, Lake Superior high grade ore will be exhausted and the low grade reserves of the east, south, and west will have to be drawn upon. That change in ore supply means a greater revolution in the metallurgy of iron and steel than the world has yet seen. That such a revolution has already begun is evidenced in the seccessful experimental treatment of certain refractory ores by electric processes recently announced from Sault Ste. Marie.

I appeal for the development of the museum. The term museum as here used refers to a repository of things that have a relation to science and technology. Such repositories are stimulating to the young, the middle-aged, and the old alike and out of the thousands of visitors a few hundred become attracted by what is shown, and now and then one becomes an Atlas in the intellectual strength acquired and exercised in scientific work or in the exercise of an inventive genius which accelerates some industry which thereby becomes world-wide in its importance. Such an organization is a powerful factor in scientific and commercial affairs; the future will see it vastly more powerful than now. Everybody needs it as an educative force, and all scientific and inventive activity finds it a necessity.

How shall the demands of the future be met? Speaking from an acquaintance in the middle west, it must be said that but few communities have arisen to the measure of their needs. This situation comes from two important conditions:

1. There is as yet but little money available for the development and maintenance of museums.

2. The efforts already made are in nearly every case dissipated by gathering a little material along many lines.

Such a thing as a complete regional collection, a representative series showing the development of some science or the exhibition of inventive attainment along some particular line of mechanical progress is very rarely seen.

There are, however, exceptions. One exceptional case may be worthy of mention because it illustrates a point in the discussion:

From the early nineties until a comparatively recent date, the Minnesota Academy of Sciences had probably the most complete collection of the ethnography and the zoölogy of the Philippine Islands to be found in the United States. It was visited by scientific men of other continents and the islands of the sea; and this, because there was in this collection material which could not be seen even by visiting the Philippines. Many of its species had never before been recorded.

This collection should be so cared for and developed that for years to come it would be a center of authority in that line it was instituted to cover. Other collections could be made, as men and opportunity appear, that along other lines could become as authoritative as is this.

The practical solution of the problem of museums of science will be in coöperation. Every community will gather and conserve its local collections in science, technology, architecture, and art. Among these collections will be many which have more than a provincial value. To develop such should be the aim of all engaged in the advancement of science and invention. Each museum will be characterized by material of a certain type. Let this type, if of value, be emphasized until it stands out as a conspicuous object of interest and stimulus to effort and thereby becomes authoritative in those problems which pertain to the advancement of industry and the promotion of civilization.

Mr. A. R. Crook then read a paper entitled

THE HISTORY OF THE ILLINOIS STATE MUSEUM OF NATURAL HISTORY

The history of the Illinois State Museum of Natural History may be of interest to the members of this Association because of points of similarity to other institutions which the museum presents, and because of the needs of other state institutions of like character.

The writer is acquainted with about a score of similar state institutions, and is impressed with the necessity of a museum for every state in the union.

The materials that are here discussed were found in the state laws, geological reports, in two curators' reports, in letters and conversation with people acquainted with the institution. Unfortunately the records are fragmentary.

If the records of the various state museums in the country were presented to us, doubtless many facts of interest would be observed, and the institutions would be stimulated to work more aggressively for the accomplishment of the purposes of their foundation.

The museum under discussion began with the enactment of a law in February, 1851, establishing a geological survey. Its history therefore covers a period of fifty-six years. At first it was a part of the survey, but after the discontinuation of that organization it was established on a separate basis. This was in 1877.

Thus geology was the science that led to the establishment of the museum and caused its vigorous growth. Other sciences, such as zoölogy, botany, and archeology have been secondary, chronologically and materially, but of later years their importance has increased.

The first man to be chosen as state geologist was a doctor of medicine, J. G. Norwood, a native of Indiana, who was thought by the committee to meet the somewhat naive requirements of the law which said that the appointee should be "a geologist of known integrity and practical skill." Doctor Norwood had been assistant geologist under R. D. Owen on a geological survey of Iowa, Wisconsin, and Minnesota, and had just written a report, which was his most extensive work, either before or after that time. The writer has found a dozen papers from his pen.[1]

Norwood considered it to be of prime importance to assemble materials from which to work, and for this end began to form a museum, July 29, 1851. He was ably assisted by Anthony Varner, who died shortly after, and by A. H. Worthen, who for many years was connected with the work and at his death was one of the most widely-known geologists in the state. So vigorously was the work of collecting prosecuted, that at the end of two years the collection was pronounced "unequalled in this country." Owen said of it: "I consider it the finest collection ever made in the same length of time on any survey that has come within my notice."

The collection at this time was in New Harmony. The inappropriateness of such a location was soon realized, and consequently in December, 1854, the specimens were packed in boxes to be sent by boat down the Wabash 40 miles to the Ohio, 120 miles down the Ohio to the Mississippi, 140 miles up the Mississippi to St. Louis, from thence by rail 100 miles to Springfield. But cold weather filled the rivers with ice and the museum did not reach Springfield till the following April (1855). Even then it was given a cool reception since no place could be found for housing it. Finally it was stored in the Supreme Court room in the building which at that time served as State House. In a few months, in order to make room for the approaching session of the court, it was moved to the Senate Chamber, where it was made accessible during the winter of '55 and '56. During the summer it was moved to the new arsenal building where new cases and drawers were provided.

But unfortunately the building was not heated and not only did the workers suffer, but their reagents and ink froze, and consequently during two or three months the work was given up entirely.

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[1] For full list of his writings see "History of the Ill. State Museum of Natural History, A. R. Crook, Springfield, 1907.

Such were the obstacles encountered by Dr. Norwood—the necessity of moving the museum three times, finally alighting in a place unfit for work; the newness of the field, there having been practically no geological work done previously in the state; and finally the handicap of small appropriations—from $3,500 to $5,500 per annum only being allowed for all expenses, including, salaries of geologist and two assistants, traveling and office expenses, and publications. In the face of such obstacles, even if the worker were energetic and competent, there would be danger of criticism from people ignorant of the difficulties under which the work was done. After six years' work there being some dissatisfaction with the results shown by the survey, a committee of nine legislators was appointed to investigate the work and reported that Dr. Norwood deserved "great credit for the faithful attention which has been bestowed upon this branch of his duty" (the museum).

In reply to a request from the committee for his opinion of the museum, the state geologist of Missouri, G. C. Swallow, wrote: "The collection is very large and contains a great variety of minerals and fossils. . . . When properly arranged and set up in a suitable room, it cannot fail to be a source of pride and gratification to every citizen of Illinois. . . ."

In spite of this commendation the governor's message reads: "From the unsatisfactory progress made, however, and from the fact that nothing in relation to the survey had ever been published or even prepared for publication (with the exception of a pamphlet of a hundred pages, the publication of which was obtained by the state officers after much effort and within the last eighteen months) it was deemed essential to reorganize the corps. This was done last spring (March 22, 1858) and A. H. Worthen was placed at its head."

In behalf of Dr. Norwood it might be noted, however, that even his talented successor did not bring out his first report until 1866—that is, after eight years in the office, having Norwood's seven years' collections to build upon and an especial appropriation of $21,000 for printing, etc., as well as his own fourteen years' experience. This does not detract from the credit of Worthen, but implies that Norwood was expected to make bricks without straw. Creditable work of that kind requires both time and money.

There is something of the irony of fate in other features of the change. The originators of the survey could not sufficiently emphasize the importance of having a survey which should be, as they termed it, "practical." The geologist was to be a man of "practical skill," his reports were to be "purely economical," "strictly of an economical character," etc. As it happened Norwood wrote more often on palaeontology than upon anything else, and Worthen's work was more than half palaeontological in quality and three quarters so in scientific importance. The same is true of the other curators. This was natural because at that time palaeontology offered the most attractive field for original work, and it would have required a very high legislative fence to keep the workers out.

During the early years of Worthen's incumbency the museum remained in the arsenal. It was then moved to a room in the Masonic Hall. Concerning this Worthen says: "These specimens, now comprising the largest and most valuable State Cabinet in the West, are kept in a rented room. . . . Permit me . . . to call your attention to the importance of securing a suitable fire proof building for the reception and display of the specimens."

In spite of this suggestion the museum remained in that room and a fire did partly destroy the building. How much damage was done to the specimens it has not been possible for the writer to ascertain. But in 1875 Worthen writes: "The large collection of geological specimens accumulated by the survey remains in the condition it was left by the fire in the Masonic Hall building, where it was formerly kept, no proper place having as yet been provided for its reception. . . ."

From 1863 to 1870 Worthen, in carrying out the provision of the law of 1851 requiring the distribution of typical collections of duplicates among educational institutions of the state, sent specimens to Prairie City Academy, Rockford Female Seminary, Monmouth College, Normal, Lombard, Wesleyan and Northwestern universities. Letters to these institutions inquiring about the collections yielded information to the writer from Northwestern University only. The collection sent there entered upon the record books of that institution September 8–15, 1871, by Professor Oliver Marcy in characteristically accurate manner, consisted of 348 fossils and 52 rocks. If like materials were sent to all seven institutions the number would be 2,800 specimens. Worthen found the work too large a drain upon his time.

By the adoption of a new state constitution in 1872 the appropriation for the state survey was abolished, but by special appropriations the work was provided for till 1875 when it was discontinued, and the fine gentleman and scholar who for a score of years had given it his time and strength was left without employment and without remuneration.

However, the museum materials were a visible quantity, and even the opponents of "visionary science" could see that the museum should be cared for and consequently the friends of such enlightenment and culture as geological work and natural history studies represent were able to pass a law providing for the establishment of a "State Historical Library and Natural History Museum." The law established the institution, set aside certain rooms for it, named the trustees, stated the duties of curator and librarian, provided for moving specimens, for distribution of duplicates, for transfer of material from another museum, and made appropriations for carrying the requirements into effect.

An interesting circular "To the Scientists of Illinois" was sent out by Worthen and S. A. Forbes, Director of the State Laboratory of Natural History, inviting their support and coöperation in enlarging the museum.

The most substantial assistance was rendered by the State Laboratory of Natural History, then at Normal. Professor Forbes sent to the museum its chief zoölogical materials, alcoholic specimens of fishes and reptiles, artistic casts of Illinois fishes, mounted birds and mammals—a buffalo, deer, bear, and smaller mammals.

In the early eighties the curator selected "a complete series of carboniferous fossils for the State Museum of Natural History out of the great mass of material brought together in the progress of the geological survey of the state. . . ." And as the years passed the orderliness and value of the collections were increased by diligent work.

This improvement availed but little since in the last years of Professor Worthen's life, against his protests and during his absence from Springfield, the museum was moved by ordinary laborers who had no more idea of the value of museum materials than Geronimo had of Shakespeare, and who threw things into inextricable confusion.

Of this move Dr. Josua Lindahl, who was Professor Worthen's successor, writes:

". . . You may, however, get some idea of its chaotic condition when I tell you that the entire collections in the museum rooms had been moved in the last year of Professor Worthen's life, against his protests and in his absence from Springfield, from one of the upper floors down to the main floor of the Capitol by order of some higher authority who engaged a furniture moving concern to remove the whole museum, without the supervision of anybody who had the least idea of how scientific material should be handled. Only in exceptional cases were the labels fixed to the specimens, and none of these had any numbers written or painted on them. Labels and specimens were therefore shoveled into the drawers and show cases at hap hazard, and by no means always so that the labels belonged to any specimens in the same drawer. In the basement the condition was, if possible, still worse. There was no closed room assigned to the storage of the vast amount of valuable material accumulated in the course of about thirty-five years, but it was piled up in an open portion of the basement, and workmen of various kinds had been using the pile as a dump for rubbish under which I would never have expected such a treasury of valuable material as was finally uncovered there and removed to a separate room with door and lock, which I secured after much arguing. The assistant told me that Professor Worthen felt so grieved over the wreck of the collections in the museum rooms, that he could never attempt to remedy the havoc. His health was already broken, and after his death, some months later, I found the collections in such a condition as indicated. I devoted years of assiduous work to save what could be saved."

While curator, Worthen published no reports on the condition of the museum. The two bulletins which he brought out (Bulletin No. 1 (1882), and Bulletin No. 2 (1884) were descriptions of fossils. They were valuable contributions to the palaeontology of Illinois. And he was able to publish Vol. VII of the Geol. Survey Reports (1883). He was a field geologist rather than a museum man in the modern sense of the word, and it was fortunate for his reputation that such was the case. The partial destruction of a museum could not diminish his fame. Up to the time of his death more than two hundred thousand dollars had been spent for all purposes of the survey since its beginning. A very small portion of that had been applied for strictly museum purposes and yet the results in that direction were gratifying.

Professor Worthen died May 6, 1888.

An account of his life and work is given by Bliss and White in the Appendix of Vol. VIII, Geol. Survey of Ill., pp. 3–37, and it may be sufficient here to mention a few facts only. He was born October 18, 1813, at Bradford, Vt., and received his education in the public schools and academy at that place. At twenty years of age he married and moved to Cumminsville, Ohio, now a suburb of Cincinnati, where for two years he taught school. Then in 1836 he became a merchant in Warsaw, Ill. But his avocation was the study of geology, and as the years passed his interest grew with the increasing size of his collections till finally science became his vocation, as we have seen.

Beginning by assembling geodes for which Warsaw is famous and using them as bases of exchange, and by indefatigable collecting he brought together one of the best cabinets of its kind owned by any private person in the west. He was connected with the museum longer than any of the other curators have been and brought to it its most unique specimens not by purchase but by his own diligent labor.

The excellence of his scientific work was recognized by fellow workers at home and abroad. He was a gentleman of the highest type both in his private and public life.

E. O. Ulrich, who was intimately acquainted with him, says concerning his character: "Its salient features were great love for scientific truth and justice, simplicity, unbounded affability, unswerving integrity coupled with an unpretentious yet strong desire to accomplish a useful career. His generosity and charity scarce knew bounds, while in his public and private life his frank and sympathetic nature and unassuming yet dignified demeanor won the esteem of all with whom he came in contact."[2]

Shortly after Professor Worthen's death a very fitting appointment was made in that of Professor Josua Lindahl, Ph.D., to the curatorship on June, 1888. The appointee, the son of an eminent Swedish minister, born January 1, 1844, at Kongsbacka, is a graduate of the University of Lund, where he pursued post-graduate studies and taught for seven years. Before coming to this country he was assistant in the Royal Museum of Natural History at Stockholm. He was a member of a number of scientific expeditions—dredging expeditions in the Mediterranean, in the Atlantic—and zoölogist on an expedition sent to Greenland by the Swedish government. As secretary of the Royal Swedish Commission at an international geographical congress he visited Paris, and later, during the centennial, came to Philadelphia and was attracted by the country. He was knighted by King Oscar of Sweden for services to his native country. For the ten years immediately preceding his connection with this museum he had been professor of natural science at Augustana College where he had built up a fine natural history museum.

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[2] For full list of Worthen's writings see History of the Illinois State Museum of Natural History, A. R. Crook, Springfield, 1907.

As an ofttime contributor to Swedish and American magazines he is well known and also for his translation into Swedish of Brehm's celebrated "Illustriertes Thierleben."

His active interest in science is further indicated, as was Professor Worthen's, by membership in numerous scientific societies. Until recently he was Director of the Cincinnati Society of Natural History.[3]

No better man has been connected with the museum than Lindahl. His first work upon assuming the curatorship was to put the museum in order. This proved to be an enormous task, since the materials had never before been in such confusion, and fortunately at no subsequent time has such disorder reigned.

While engaged in this work he found time to edit Vol. VIII of the Geological Survey Report, which Worthen had prepared for publication, but was prevented from completing on account of his death.

Preparations for the World's Columbian Exposition were being made throughout the state and Lindahl was instructed to collect and place on exhibition in the Illinois State Building materials that would properly represent the geology of the state. He began with vigor to bring together illustrations of the stratigraphy, the palaeontology, and economical geology of the state, and with the aid of several able assistants soon had a very creditable exhibition. Unfortunately, because of a change of the political party in power in the state, he was removed while in the midst of his work.

Lindahl, with the true spirit of the curator, at all times showed himself to be a care-taker and preserver of the materials and interests of the museum. If his spirit had always prevailed the State Museum would at this time be much richer in materials than it is.

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[3] For partial list of his papers see History of the Illinois State Museum of Natural History, A. R. Crook, Springfield, 1907.

His successor, Wm. F. E. Gurley, was appointed in July, 1893. Mr. Gurley was born in Oswego, New York, June 5, 1854. His parents came to Danville, Ill., in 1865, and since that time he has considered that place his home. He was a student at Cornell University, and later became a prospector in Colorado, and for five years was city engineer at Danville.

He early acquired a taste for geology and began to make a palaeontological collection and library.

As to his tastes and his work while connected with the museum, Mr. Gurley says:

"From the moment I first became interested in the subject of geology, I set to work accumulating a palaeontological collection and library, and it was my ambition to place myself in a position financially where I could 'settle down' and devote myself entirely to this subject.

"When a child of six years, I was rendered totally blind through sickness, and after a period of several months partly recovered my sight. I never fully recovered, and during my entire life have been subjected to much inconvenience from this source.

"During the last year I was curator my eyes failed materially to such an extent that it became impossible for me to read common newspaper 'print' without the aid of a magnifying glass, which was extremely tedious and very unsatisfactory. In due course of time I became convinced that the failure of my sight was permanent, and I was forced to lay aside all ambitions of a scientific nature, it being impossible for me to attempt anything of a 'technical' sort."

Mr. Gurley is a charter member of the Geological Society of America and a fellow of a number of scientific societies at home and abroad. At present he is Curator of Paleontology in the University of Chicago.

The Bulletins which were published by Gurley and Miller deal with the same line of work that claimed the chief attention of Norwood and Worthen and show that in spite of the demand for "purely practical" work made by the legislature, work chiefly of scientific nature was produced.[4]

[4] For list of Bulletins see History of the Illinois State Museum of Natural History, A. R. Crook, Springfield, 1907.

During Gurley's incumbency the museum made its customary move—this time from the first to the third floor of the State House.

It may have been from the point of view of the protection of the specimens, wise and desirable, to donate to the University of Illinois the materials brought together by Curator Lindahl for the World's Fair. But from the point of view of the museum it was detrimental. The transfer from the first to the third floor was a step backward, as the new quarters were more contracted and were partly used as committee rooms by the legislature.

The next curator was Mr. C. H. Crantz, who was appointed in 1897 owing to a change in state politics. He is a native of Sweden and at the time of his appointment was in business in Chicago.

In 1903 he published a report of the museum. The move which came in his incumbency saw the transfer of the collections from the State House to the arsenal. A few more square feet of space were gained, but at the expense of dignity and beauty in the surroundings. The curator was able to bring all the zoölogical specimens under glass. But the only arrangement possible is that allowed where every square inch of space must be utilized.

In 1905 a new geological survey was organized under excellent provisions and leadership. Already it has produced valuable results. The only formal relation between it and the museum is expressed by the clause, "The whole or part of such material may be placed on permanent exhibition in the State Museum of Natural History at Springfield. . . ."

The present curator was appointed September 15, 1906.

Conclusion

In reviewing the history of the museum a number of facts come prominently to view.

First, men of scientific instincts and activity have had the work of the museum in charge. They have added to scientific knowledge generally and have built up the museum in particular.

Second, as a result of their abundant labors much valuable material has been brought together.

Third, the museum does not begin to contain the collections that it should contain. It has suffered by fire. It has been moved nine times without having reached a location in any degree suitable either as far as space, light, dignity, or beauty are concerned. Money that should have been spent for materials has been used in moving.

Two of the curators, Worthen and Gurley, were ardent collectors before coming to their office, and during their incumbency continued collecting for themselves. At the time of their leaving the curatorship they were criticized because of the size and value of their private collections.

It was urged that their energies as collectors should have been turned wholly toward building up the State Museum, and that if such had been the case the museum would have been much richer. On the other hand it was said that the state was an unjust employer, failing for two years to pay one curator and turning off the other without just cause.

The state neither properly prized nor cared for the valuable materials which were brought together as the result of painstaking and arduous labor.

However, by some arrangement, those materials should have been saved for the state, and the most appropriate place for them is the State Museum. There should be a law whether written or unwritten that no curator should collect for himself. It might work hardship for the curator, but it would be for the proper advantage of the institution which he served.

The museum has had a long and eventful history. It has filled a place of usefulness, but the opportunity which lies before it is far greater than that which is past.

To use the opportunity and meet the obligations which are upon it will require the interest and help of all those who are in any degree responsible for its conduct.

To advance in utility and perfection it needs the hearty sympathy and support of the legislative committees which provide its finances. It needs the coöperation and careful thought of its trustees. When these are granted, the museum staff, by skilful and diligent application, may be able to produce a museum even more nearly approximating such an institution as should represent the great and prosperous state of Illinois.

The museum should preserve the vanishing types of animals and plants of the state. It should represent the history of the state as far as nature is concerned. It should be a place of entertainment of the highest sort.

Throughout the United States the value of museums as places of entertainment and education is being more appreciated. It is coming to be realized that museums supplement schools and libraries. They often appeal first to people who are not influenced by other sources. They are places of amusement of the highest type and the public deserve amusement. They are a means of education inasmuch as they show the world in which we live as it is and have a sane and wholesome influence on the public.

The museum field is a great and valuable field. As the state preserves her natural history treasures for the schools, she can at the same time afford every one, learned and humble, rich and poor, such a view of their environment as will enrich their intellectual equipment.

The Chair.—"This is the first time that the activities and work of state museums have been brought before our Association. It is a matter of gratification, I am sure, to have this phase of museum work presented. There are a number of important matters suggested by Mr. Crook's paper which might be made themes of interesting discussion. Our time, however, is limited, but I hope that at future meetings of the Association these questions may be taken up and thoroughly discussed."

The next paper presented was read by Dr. Charles C. Adams, of the University of Cincinnati, on

SOME OF THE ADVANTAGES OF AN ECOLOGICAL ORGANIZATION OF A NATURAL HISTORY MUSEUM

In the following discussion I have in mind primarily local natural history museums, of limited means, that devote their attention to the study and exhibition of the geology, vegetation, and animal life of their state or immediate vicinity. It has been customary in such museums to arrange the geological specimens according to the system of some synoptic or text-book, without regard to the influence of local conditions or environment upon the material. The plant and animal collections and exhibits have received a similar synoptic or taxonomic arrangement. If, however, a comparison is made between the exhibits and the reference collections in such museums, it becomes quite evident that the former, on account of their closer relation to the public, have responded more quickly to their interests and needs. It is therefore quite natural to expect that it will first be in the exhibits that we find a marked departure from the synoptic and taxonomic ideas toward ecological phases; at least this seems to be true with regard to plant and animal exhibits. At this point let us clearly bear in mind that ecological relations are those which relate organisms causally to their complete environment. It is of interest, however, to note that at the present time a marked change in this direction is to be seen in ethnological exhibits, where the influence of the environment upon the culture of peoples is clearly recognized. It is apparent that the general principles and methods of display along ecological lines has already reached a fair degree of development and are easily accessible, so that they only need correlation and adjustment in order to be systematically applied to the ecological problems of a local natural history museum. To be sure, there are many points of detail to be worked out, especially with regard to the storage and indexing of the collections, the correlation of the work of the museum staff, etc., but these are problems which can be solved as the occasion arises.

THE IDEA AND ITS APPLICATION TO EXHIBITS

So far as known to the writer, no local museum has been developed or organized primarily along the lines here suggested, and although many of the elements have long been in use they have not been correlated as here outlined. The subject will be taken up in the following order: First, the geology, because it involves the gross environment; next the vegetation; and finally the animal life. The primary or dominant idea or ideal in the following suggestions briefly stated is, that all *processes* of the physical conditions, the vegetation, and the animal life, should be completely and *genetically* correlated. The soils, rocks, minerals, topography, plant and animal societies, and even human affairs, are so intimately related and correlated that any important change will in time change all. This may seem at first glance to form such a maze of complexities as to reduce all phenomena to chaos rather than to order. To make these ideas clearer it is therefore desirable to present them in more concrete form, and yet avoid too much detail. First let us consider the application of this plan to the geological problems.

Geology.—The local geology should be considered in a broad sense so as to include the soil, rock structure, physiography, and geography of the region. Palaeontology would be secondary here and receive full treatment in connection with the history of the local biota.

Physical processes should receive treatment first and should be fully illustrated by both specimens and photographs, as far as the vicinity will allow. The local weather should also receive adequate consideration at this place. In the organization of the general geological principles, and for an abundance of suggestions, reference should be made to Van Hise's "Treatise on Metamorphism," and Chamberlain and Salisbury's recent "Geology." The local work should be carried out in *much detail,* with numerous specimens, contour and relief maps, photographs, etc., so that the public or student can easily receive a good idea of the local physical conditions and of the dominant forces and processes which compose them; for it should be remembered that it is in these features that we find the broad outlines of the local environment not only for plants, but also for animals—including man.

To build up collections and exhibits along such lines will necessitate considerable research, correlation, and an assembling of facts and principles, which, aside from purely educational and scientific purposes, would of necessity be of much practical value to the state, or local community. Certain special subjects would require separate exhibits, such, for example, as the history of life at or within the given locality or area. This is a subject of importance, and of much local interest, and should be fully investigated and displayed.

Vegetation.—Building upon the foundation laid by the detailed study of the climate, soils, topography, geography, etc., resulting from the detailed and correlated results of the local geological work, a knowledge of the local physical conditions would be secured which should contribute much toward our knowledge of the forces and processes which have determined the present composition, arrangement, and mutual relations of the local vegetation. These features should be mapped, photographed, and illustrated by representative specimens, in such a manner as to clearly show their field relations, societies, the principles which control their successional relations, and their responses to changes in their environment.

Instead of the usual dried and pressed specimens, which arouse so little interest and are of only restricted utility, all available methods of preservation should be used, and a special effort should be made to preserve them in such a way as to show the relations to their environment, their associates and their life histories. In other words, special collections should be made to show plant societies and their ecological relations. For guiding principles the work of Cowles and Clements should be consulted, as they furnish a wealth of suggestions; but the application of the principles must be worked out for the particular locality and will be sure to furnish abundant opportunity for original investigation. The entire application of these ideas to vegetational exhibits is yet to be worked out. Perhaps the most suggestive exhibits in this country, which will throw light upon these problems are the economic ones by Millspaugh in the Field Museum of Natural History. In addition to these major vegetational features, exhibits of special problems should be made, such as those of peculiar local interest or of educational value, as the evolution of certain groups of plants, plant associations, plant structures, and perhaps some problems of local economic interest.

Animal Life.—Upon the foundation developed by the combined results of the geological and vegetational work there should be developed a survey of the animal life of the region. This should be continued along lines similar to the other surveys and correlated with them in as much detail as possible. The representative forms of animals, their associations and relations to their environment, should receive detailed investigation and exhibition. The greater complexity of the animal problem over that of the vegetation could be greatly simplified by special exhibits, such as the evolution of animals (a subject sadly neglected in our American museums), growth and development of selected forms, geographical distribution, variation, heredity, seasonal color changes, moulting, etc. These are problems of very general interest and should, even at considerable sacrifice, be illustrated by the local fauna as far as possible. So far as I have been able to learn this phase has never received in this country the serious attention which its importance merits. In the current literature evolutionary processes are largely illustrated by exotic material, the authors ignoring or ignorant of that which is near at hand. Certain local interests should also receive special attention, such as the migrating birds, the local fish and game, prominent insect pests, etc.

Extensive synoptic collections and endless series of similar (to the public) specimens should be sternly relegated to the background or be placed, such as may be necessary, in drawer cases where the interested student may, if seriously inclined, have access to them.

One of the primary ideas, not only of the animal exhibits but of all kinds, should be to show that the moving power in science is to be found in the intrinsic value and interest of scientific ideas, in addition to their application to practical purposes. We consider the development of scientific ideas as the true measure of a science, and for similar reasons, ideas should determine the existence of every exhibit. Museum exhibits have suffered (among other things) from a poverty of ideas and a superabundance of specimens which show little, and are unintelligible to the public. Harrera of Mexico has expressed the application of such ideas to museums in the following manner: "In the museum of the future the specimen is the lacquey of an idea; whereas, in our present museums ideas are the slaves of specimens."

INFLUENCE UPON COLLECTIONS

The foregoing statements are primarily concerned with the direct influence of an ecological organization of a museum upon the exhibits, while in the present section I wish to emphasize its influence upon the study series or the collections in general. It is quite evident from what has been said that the present collections in local museums are utterly inadequate to furnish material for the ecological exhibits. To develop such exhibits then will mean extensive field work and fresh collections with an amount of detailed field notes and observations rarely attempted by the old methods of collecting. One of the weakest points in museum specimens is the small amount of history accompanying each specimen. The older naturalists were satisfied with a label stating "North America," later with "United States," and even now we have thousands of specimens in the museums with only state labels. But this clearly shows the trend of the change and we are now reaching the place where detailed field notes must accompany each specimen. We may not wish to go to all this trouble, and many will resent it, but there can be no doubt about the ultimate result in this respect. A change in this direction will be in perfect harmony with one of the leading advances in museum methods, and an ecological organization would certainly favor and reinforce such a change.

Taxonomic work and ideals have in the past dominated the biological work in the museums, and most of the large ones even today. The current methods of taxonomy, which appear to some to have long since reached the "point of diminishing returns" as far as many general biological ideas are concerned, do not make the urgent demands for detailed notes on environmental relations as does ecological work; and this gives additional weight to the latter. While material collected for ecological purposes will also serve for taxonomic work, the reverse is not as true. Taxonomic work has been dominant, and taxonomic phases do not attract the popular interest; it represents only a limited phase of scientific problems, and yet as valuable as it is, the time is coming when it will become less and less a conspicuous feature in museum work, not by extinction but by the growth of the other, perhaps ecological phases. The reference series in museums are, as a rule, grouped systematically so that such facts of ecological importance as are contained in such a series are so widely scattered as to escape even diligent search. What will be needed in the future will be at least two series of collections, a taxonomic one and an ecologic one. The latter must be developed at least to the same extent as the former. Much the same reasons may be urged for these two series as can be given for a subject index in a library.

Enough has been said to outline the relation of the suggested organization upon the basal collections—the study series. Still another important phase for consideration is the influence of such a change upon the museum workers themselves.

INFLUENCE UPON THE MUSEUM STAFF

There can be no doubt that one of the brightest features of museum work during the past thirteen years has been the great increase in the breadth of view and the responsibilities of museums. With this there has been a marked change in the type of men going into museums, so that today many of our ablest naturalists are to be found in them. Undoubtedly as long as museums were so cramped financially that workers were doomed to dusting specimens and an almost complete sedentary life many men were repelled by them. As soon, however, as ecological phases, with its consequent field work and expeditions, is made an essential part of museum activity, we may look for still further changes for the better in the character of museum men. In a given field the opportunities available are certainly important factors in determining the character of the men who will enter it. For many kinds of investigations the mechanical grind of regular university hours are not only decidedly disadvantageous but practically forbid the undertaking of many lines of investigation which require continuous or very irregular hours of work; and except for limited periods resident work by such men is usually impossible. With the increased breadth of museums and enlarged opportunities for research the quality of museum men may be expected to greatly improve.

PRACTICABILITY

A few words should be said for the practicability of the above suggestions for ecological organization of a state or local museum. I hardly anticipate much criticism of the geologic features, as that part of the problem is apparently relatively simple, although some geologists might object to geology being subordinated, in a way, for purposes of organization, to a biological scheme; but when it is remembered that by ecology is meant the relation of organisms to their complete environment it seems that with such latitude there should be room for all necessary freedom. At the same time it should be remembered that the classification is primarily based upon *processes,* as the ecological work is all planned upon that principle—an ecological expression being largely one of convenience as its method is perhaps more generally understood than that of processes.

With regard to the vegetation there are greater practical difficulties, but with commercial museums, forestry exhibits, and economic botanical exhibits like that of the Field Museum of Natural History, one cannot help but believe that all that is needed is a man of botanical resources to solve the difficulties here involved.

With regard to the animals, that part with which I am most familiar, there is no doubt in my own mind as to its feasibility. When one notes the marked ecologic advances in museum methods along some lines —the animal groups and the ethnologic exhibits—it is seen that for exhibit purposes great advances have already been made, although these advances have not yet reached, to an equal degree, the reference collections; nor have they reached the proportions which we may anticipate during the next few years. I venture to predict that in the near future the ecologic features will become, at least in the newer museums, a very prominent—perhaps a dominant feature—not only in exhibits but also in the research and general activities of museums.

With regard to the reserve or study series of museums much the same remarks hold as for the exhibits. Whenever collections have been made for economic purposes, more or less of the ecological methods of preservation have been followed; this holds for both geologic, vegetational, and animal collections. The cataloguing, storing and labelling are thus seen to present no innovations; the necessary changes being largely in the nature of such adjustments and correlations as are intended to retain the intimate interrelations of objects and organisms to their environment, because minerals, rocks, plants, and animals are all influenced by their environment.

One can hardly doubt but that one of the most serious difficulties encountered by museums with limited means in the realization of such plans, will be to find men with enough originality and resources to develop consistently such plans, for while precedent will act as a general guide, many problems will be encountered that will require independent thinking. A museum to develop, in addition to increasing in size, must advance qualitatively as well as quantitatively. A real difficulty is to correlate these two tendencies, because as a rule, they are not combined in individuals and hence the organization of an institution must recognize this fact. If the quantitative criterion of value is dominant, both collections and facts may be accumulated without a just appreciation of their value and relations, while on the other hand if a qualitative criterion is dominant differentiation may take place too rapidly, and sufficient facts will not be accumulated, correlated, and hence only superficial work will be done. For these reasons a museum, or a department of a museum, may find it necessary to secure both types of minds in order to secure the correlated results.

In conclusion it should be stated that a local museum established upon plans similar to those just outlined could, by a natural growth and with increased resources, develop or spread from its local interests and become general or geographic without any rupture of its system. This is only possible because the basal principles are those of *processes,* and thus in character as universal as energy, from which radiate the entire successions of cause and effect. To make the transition from the special to the general very little change would be needed in the geological series except that of extension; while for the vegetation the same principles hold and are easily correlated with such a treatment of vegetation in general as that given by Schimper in his "Plant Geography." In the case of animal life, however, while the same general principles will hold, their application is much more difficult, on account of the complexity of the subject and the lack of any comprehensive treatment of the principles involved. Such a relation as this clearly points to a field for research which can be cultivated to the best advantage only by those associated with museums. Such a transformation, from the local to the geographic, does not imply that plant and animal geography are synonymous with ecology, although there is a very intimate relation, because at the present stage of development ecology receives its best aid from the earth sciences on the one hand and general physiology on the other.

The Chair.—"I am sure that we have all been delighted and instructed with the presentation of this theme, which is an important one."

Dr. W. P. Wilson.—"There are a number of questions which might profitably have been discussed at our sessions, and I am a little disappointed that they have not been brought up for consideration. I propose that they be taken up at our next meeting. One of the matters that it seems to me ought to be discussed is 'The Suitable Adaptation of Buildings to the Work of Museums.' Another question which ought to be discussed is 'The Cultivation of Reciprocal Relations between Museums.' There ought to be a measure of affiliation between various kindred institutions engaged in our line of activity in order more particularly to stimulate the exchange of specimens. Some museums possess more material than they can use; others have often none of the same kind of material. Museums are educational institutions, and it ought to be a godsend for some of the poorer institutions to receive from the wealth of material at the command of others that which they would be willing to give. We ought to have a sort of clearing house system for duplicate material. A third point is 'The Advisability of Joint Arrangements between Museums for the Employment of Experts.' Some museums are large enough and have sufficient means at command to do almost anything which they wish to do, but there are other smaller institutions which cannot employ the best men as experts to arrange their collections and properly instal them. Arrangements might be made between museums to secure the services of the ablest experts either in Europe or America to undertake the arrangement and installation of special collections. And there are experts, I have no doubt, who would be delighted to render such services, working at one museum for a few months or a year at a time, and then going on to another museum which might require their services. Still another question is that of 'United and Harmonious Effort between Museums in Securing Collections.' I know that united efforts have been made occasionally by some of our museums in different directions, arrangements being made by which joint expeditions have been sent to make excavations or to carry on explorations. Such harmonious coöperation is likely to be productive of results far more satisfactory than are achieved when institutions work in entire independence of each other and without regard to what others are doing.

"I hope that these hints which I have thrown out will be borne in mind and that some of these questions will be brought up for discussion at our meeting in Chicago."

The Chair.—"The remarks of Dr. Wilson which we have just heard prove the wisdom of founding this Association of Museums. The Chair ventures to suggest that the Chicago meeting will be one of unusual interest, and that many important and juicy subjects will be brought forward for consideration."

Dr. W. P. Wilson.—'I wish to advocate the idea of having at some suitable place a collection of exhibits illustrating the work of the museums of this country. The collections should consist of photographs and plans of the various buildings, photographs showing the installation of specimens. There ought to be collections showing the various systems of mounting and installing specimens, collections showing the construction of display cases and things of that sort. I am going to foster that idea, and propose to collect material not only from the larger museums, but from the very smallest museums in the United States. I may say again that I was particularly interested in the account of the work that is being done by the museum at St. Johnsbury, Vermont. I had never heard of the Fairbanks Museum until last night when Miss Griffin gave us her illustrated account of the work of that museum. Its work is indeed wonderful in view of all the circumstances."

Upon motion it was

Resolved, That the American Association of Museums extends its sincere thanks to the Pittsburgh Plate Glass Company, the Carnegie Steel Company, the Western University of Pennsylvania, and to the Pittsburgh Golf Club for courtesies proffered and extended to us.

It was upon motion

Resolved, That this Association renews to Mr. and Mrs. Robert C. Hall its sincere thanks for their delightful hospitality so bountifully extended to the institution on Wednesday the fifth.

It was upon motion

Resolved, That the most cordial thanks be extended to the Trustees and Officers of the Carnegie Institute and the Carnegie Library of Pittsburgh for their most courteous hospitality and the graceful attentions which they have shown us, contributing so much to the pleasure and profit of this meeting.

Dr. F. A. Lucas.—" I desire to express my sense of the debt which I think we owe in this connection to Dr. Holland. I think I echo the sentiments of all who are here when I move that we express to him personally our thanks."

Dr. W. J. Holland.—" The gentleman is absolutely out of order."

Upon motion it was

Resolved, That a committee consisting of the president, the two vice-presidents, and Dr. George A. Dorsey, with authority to call to their assistance Mr. George Francis Dow and Mr. Lawrence W. Jenkins and others, be appointed to take up the question of the rates which are demanded by the postal authorities in the case of the publications of museums issued at irregular intervals.

Upon motion it was

Resolved, That it is the sense of this meeting that at future meetings the time occupied in the reading of papers should be limited to twenty minutes, unless otherwise ruled by the body in session, and that abstracts of papers should be in the hands of the secretary at least one month in advance of the meeting, and that this resolution be referred to the Council for definite action.

It was

Resolved, That the president and vice-president, the present and the incoming secretary be appointed a committee to prepare for publication a full report of the proceedings of the present session.

Upon motion the Association adjourned to meet at luncheon as the guests of the Trustees of the Carnegie Institute at the Pittsburgh Golf Club.

Luncheon was served at one o'clock. At the conclusion of the luncheon a number of brief congratulatory speeches were made by different members of the Association who were called upon, and finally, upon motion, it was

Resolved, That the Association adjourn to meet in Chicago on May 5, 1908.

After adjournment the Association proceeded to inspect the Carnegie Library of Pittsburgh under the guidance of Mr. Anderson H. Hopkins, the librarian.

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